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LETTERS FROM RUSSIA
IN 1875.

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IN 1875.

By E. J. REED, C.B., M.P.,

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AUTHOR OF 'SHIPBUILDING IN IRON AND STEEL,' 'OUR IRON-CLAD SHIPS,' ETC.;

KNIGHT OF THE IMPERIAL RUSSIAN ORDER OF ST. STANISLAUS,
OF THE AUSTRIAN ORDER OF FRANCIS JOSEPH, AND OF THE TURKISH
ORDER OF THE MEDJIDIE, 2ND CLASS;
AND LATE CHIEF CONSTRUCTOR OF THE NAVY.

[REPRINTED FROM '*The Times*,' WITH A PREFACE]



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P R E F A C E.

It is in compliance with many requests from friends and others that the re-publication of the following letters has taken place. At the commencement of the first letter, and at the conclusion of the last, I felt bound to apologise for the desultory character of their contents, and I cannot now understand how it happens that letters written with so little forethought, and during many distractions, came to be read with so much interest as to make their re-publication necessary. I am bound to attribute the result chiefly to the circumstance that they were fortunate enough to obtain a place in the columns of the *Times*, and to be noticed more than once with favour in its Editorial columns.

In placing them again before the Public in another form (with the kind permission of the Editor of the *Times*) I have thought it undesirable to make any substantial alterations, and the following pages are therefore almost without exception literal reprints of the letters as they first appeared. Two or three very slight corrections have been made, but only one, I believe, of any importance. A letter in the columns of the *Times*, signed "Land Defences," took just exception to my complaint

that nations employ "two totally different sets of defenders, naval and military, with separate interests and separate professional traditions." By the omission of the words "for maritime defence," which I intended to have written as a limitation of this complaint, my objection was made to assume a scope altogether beyond what I purposed, and in the following pages I have therefore inserted those words where I ought at first to have written them. Of course it was not my intention to complain that it is the modern practice to separate the army from the navy ; what I did find fault with is, that the *maritime defences* of our country should not be subject to one controlling power. It is well known that many naval officers consider the Spithead fortresses and other like defences carried out by military engineers, to be not only mistaken in principle, but also to furnish an enemy with special facilities for guiding themselves in an attack upon the places so defended. The late Captain Cowper Coles, if I remember rightly, was very earnest and very persistent in expressing this view of the subject, and it seems to me unfortunate that maritime, and even mid-water works of defence should be carried out without the approval of the Naval Service, expressed by its responsible chiefs, and supported by the general consent of naval officers. The writer who assumed the name of "Land Defences" went, however, beyond the objection which I have here agreed with, and objected to floating fortresses being employed in positions like that which I mentioned, viz. between

Kinburn and Otchakoff, on the ground that such fortresses might be sunk. This is an objection which has to my mind no weight, because although a circular ironclad might be sunk in the channel between the places named, the danger of being sunk would be entirely removed if she were placed where she ought to be for the defence of that passage, viz. in the shallow water near the mainland where she could not be attacked by ships in the rear. I am quite sure it is a mistake to place a mid-water fortification where the Imperial Engineers are constructing one. "Land Defences" seems to base his objection to floating fortresses, as many others have done, upon that very mobility to which I attach the greatest value. He seems to think so poorly of our war commanders as to believe that there is great risk of placing in their hands fortresses which can be moved from one place to another, fearing that when wanted they would either be placed where they could be sunk, or else be found on a foreign station when wanted at home. It is from a similar apprehension that so many persons advocate the construction of coast-defence vessels unfit to proceed to sea, lest they should be at sea when wanted at home. I have no sympathy with such persons. Their ideas seem to me to range upon a level with those of a few shortsighted naval officers who object to furnishing our men-of-war with the powerful weapon of the ram, because either by pure accident or by bad management the ram is occasionally made to inflict injury upon a friendly

vessel. It is our duty, I conceive, to purchase with our outlay upon defensive constructions, powers as great and as varied as possible, and to take upon ourselves the further duty of training officers of every class to the right use of such constructions. I do not carry this principle so far as to justify excessive risk or complication, and thus to create a demand for an unattainable degree of skill in our officers and men; but I maintain that we ought not to be debarred from the use of rams and of floating fortifications because of our presumed inability to get them properly employed.

As I was on the Continent, and moving from place to place when my letters appeared, and for some time afterwards, I was not able to see the criticisms which were passed upon them, nor have I since had leisure to search for them through the newspapers of that time, but a letter, signed "Naval Officer," that appeared in the *Times* of the 9th November, came under my notice, and deserves a word of comment. The object of the writer was to show that we are already in possession of a class of vessels suitable for attacking the circular coast-defence ironclads of Russia, and also that "circular vessels are from their shape more liable to be damaged by torpedoes than are vessels of the usual shape." The latter suggestion seems to me to be so inconsistent with the facts, and so irreconcilable with the special facilities which the circular form affords for isolating the magazines and machinery, that I cannot persuade myself to reply to it. If the writer had confined himself to saying

that the flat bottom of a circular vessel must be far more exposed to damage than an ordinary ship when passing over fixed submerged torpedoes, I should have explained that the circular vessel has so much less area of bottom than an ordinary vessel carrying equal armour and armament, that she would be much the less liable to injury of the two; but when he goes on to say that a vessel 100 or 120 feet long, and 12 feet deep, and capable of carrying armour, if desired, down to the very bottom, is more exposed to the attack of a Whitehead torpedo—which moves horizontally, or nearly so—than a vessel, say twice as long and half as deep again, and which cannot be protected down to the bottom,—I say, when he states this, it seems to me that he must be under a fundamental misconception of the whole subject. And his first contention, viz. that the little iron gunboats which Mr. Rendel so cleverly introduced, and of which we now possess about a score, are the exact type of vessel with which we could, if need be, attack the *Novgorod* and *Admiral Popoff* in the Sea of Azof and at the mouths of the Dnieper—forces me to the same conclusion. These little boats of ours, useful as they might prove at home, are utterly incapable of crossing the ocean, and could by no possibility be despatched abroad as part of a squadron of attack. It may be all very well for “Naval Officer” to “suppose six such vessels engaging her (the *Popoffka*) at about a distance of 1600 yards, and delivering a converging fire,” &c., and certainly, if he can suppose these tiny craft getting to

the Black Sea at all, he can suppose anything he pleases afterwards; but the whole reasoning is based upon the Bobadil system, which, however amusing, is not worth serious discussion. England must not depend for the assertion of her naval power abroad upon the capabilities of small steam-vessels which carry no sea supplies of coals, provisions, or any other kind of stores.

“A correspondent who has just returned from Russia,” recently obtained the insertion in a London morning newspaper, of a letter, the object of which appeared to be to cast the utmost possible doubt and discredit upon my communications from Russia. This sort of thing is, I presume, the almost inevitable sequence of any form of public success or influence, and even the modest position which I may be presumed to hold in this country, furnishes the occasion for quite a staff of hostile persons labouring incessantly to contradict and controvert any remarks or observations which publicly proceed from my lips or my pen. It is but seldom that I notice the efforts of these gentlemen, and in the present case I will take no pains to reply to the “Returned Correspondent” beyond giving a place in this Preface to an article which has appeared in one of the local newspapers of the boroughs which I have the honour to represent in Parliament, the *Pembroke Dock and Tenby Gazette* of the 23rd of December, 1875. The Editor says :—

“We notice a letter in the *Standard* of Friday last, signed by

‘A correspondent who has just returned from Russia,’ which seems to us to misrepresent the statements of Mr. Reed in so many respects that we must reply to it. This writer first says, that Mr. Reed, five years ago, on returning from abroad, gave a sensational description of the Russian Navy, and asserted that a sea-going monitor the *Peter the Great* was nearly complete, and so forth. Now we read Mr. Reed’s communications of that date even more carefully, we think, than the *Standard* correspondent seems to have done, and we deny that he gave a ‘sensational’ description of the Russian Navy, or that he alleged that the *Peter the Great* was nearly completed. He described the *Peter the Great* in terms which were accurate, and he mentioned the commencement of the construction of circular ironclads, the keel of the first of which he then saw laid. But we challenge this correspondent to produce from Mr. Reed’s communications of that date any sensational description of the Russian Navy generally, or any statement concerning the period of the monitor’s completion. At the time Mr. Reed wrote, the *Fury*—now *Dreadnought*—had been ordered and commenced, and yet is not at present nearly so far advanced as the *Peter the Great*, which is complete in all respects, except her turrets. Mr. Reed’s communications, no doubt, carried great weight with them, and careless writers, and still more careless readers, drew inferences from them for which he was not responsible; but this writer has no right to impute to him language which he never employed, merely to give himself the opportunity of easy and cheap contradiction. This correspondent is correct, in our opinion, when he says that Mr. Reed’s communications of that date stimulated the Government to greater activity, but he speaks with rashness and with inaccuracy (which met with a well-merited rebuke from Mr. Reed himself, in his speech upon the Navy, at Pembroke, on Monday, the 6th instant) when he says, that the ships which the Government then built under the stimulant of Mr. Reed’s words, ‘are now condemned by the persons who designed them.’ We presume that he means by this, that Mr. Reed, in recently describing the qualities and advantages

of circular ironclads in certain important respects, condemns all previous vessels, and in a certain sense, no doubt, a man who praises a new thing condemns all other things that have gone before it, which is all the *Standard* correspondent probably means. But if this be all he means, he has no right to clothe such a meaning in the words we have quoted, which are calculated to convey a totally different impression. This writer says, that the *Peter the Great* is still in an unfinished state, and Mr. Reed, in his recent letters from Russia, stated the same; but he had the good sense to do what his critic has failed to do, and stated the exceptional causes which have led to delay in her completion. The writer to the *Standard* adds that the whole of the Russian Navy is as inefficient and as incomplete as it ever was, a phrase which may mean almost anything, but none of the meanings of which is scarcely consistent with the fact that the *Peter the Great* is complete in all respects, with the exception of her turrets, as we have already stated; that the circular ironclad *Novgorod* has been completed for nearly two years; and that the second circular ironclad, the *Admiral Popoff*, was launched in Mr. Reed's presence in October last. Passing over what seems to us to be a not very sensible paragraph, to the effect that if unforeseen accidents have prevented the completion of the *Peter the Great*, similar accidents may render other ships useless—a suggestion that would hardly occur to a man accustomed to accurate thinking,—we note that this correspondent says, that we have simply to prohibit the exportation of armour plates to prevent the completion of the Russian vessels. This remark is absolutely incorrect, inasmuch as it proceeds upon a thoroughly untrue assumption that there are no armour-plate manufactories in Russia. If this correspondent had turned the time which he professes to have spent in Russia to good account in reference to this subject upon which he undertakes to instruct the public, he would have known that at Kolpino, a few miles from St. Petersburg, there is a very large armour-plate manufactory, at present undergoing great extension, in which a great many armour-plates for Russian ships have been rolled, and in which

in point of fact the armour plates for the completion of some of the ships now in progress are being rolled. No doubt, the Russian Government has found it convenient to draw part of their supply of armour-plates from England, as several other European Governments have done ; but if such inferences from this fact were correct, and if such reasoning were sound, we might, by an equally simple process, stop the further completion of ironclads throughout Europe, for we believe that Russia stands next to England, if not alone with England, in the power of manufacturing armour-plates.

“This correspondent next makes a disingenuous reference to the young officers whom Mr. Reed mentioned in his letters as exhibiting skill, using language which would make the ordinary reader suppose that Mr. Reed had spoken only of young naval architects, and that they were all trained in England. This is quite untrue. Some of the young officers whose names were mentioned by Mr. Reed were not naval architects at all, but officers of the Imperial Russian Navy, who have not been trained in England. Besides, if this were otherwise, and if they had all been trained in England, that fact, instead of refuting the statement in corroboration of which Mr. Reed referred to them, would in point of fact have confirmed that statement. For what was it? It was, that such was the fostering care of the Russian Government that much intellectual activity was exhibiting itself on the part of young Russian officers, and surely no better illustration of the fostering care with which the Government in Russia is training and encouraging its young officers can be produced, than the fact that they send them to England, at the expense of the Government, to be trained in the highest science in the naval profession. We cannot understand how any writer who professes to speak with weight upon such a subject can fail to see that, instead of refuting Mr. Reed, he is adducing the strongest possible corroboration of his statements.

“The next complaint is, that Mr. Reed did not mention that much of the steam machinery of Russian ships is made in the works of Messrs. Baird, of St. Petersburg, which firm was

founded, and is still owned by Scotchmen, and employs English officers to a considerable extent. But we are at a loss to see what possible bearing these facts have upon Mr. Reed's arguments. If the object of Mr. Reed had been to extol Russian manufacturing establishments at the expense of British, we can understand such facts would have a bearing upon the question. But Mr. Reed is not so foolish as to put any such views before the public. The view which he did express, and which is not in the slightest degree affected by such facts, simply was, that the Imperial family of Russia exercises a very fostering care over their navy, and that the encouragement which they hold out to young Russian officers engenders great intellectual activity among them. How on earth is this statement contradicted by the fact that British proprietors own, and British officers conduct, an establishment for manufacturing marine engines in Russia? We may put the same question with regard to the remarks about the Baltic Works, in which this correspondent drags in Mr. Reed's name as a director, without doing him the justice to say or to imply, that although Mr. Reed wrote voluminous letters upon Russian matters, he made no mention whatever of the works in which he himself was personally interested. If this writer had wished to be fair to Mr. Reed, he might have mentioned this.

“This correspondent next asks a question, which every reasonable Englishman must have answered for himself the moment he saw it propounded. He says, is not the money spent on ironclads since Mr. Reed wrote five years ago thrown away? Can the writer of such criticism, which appears in the columns of the *Standard*, really be in earnest, in supposing either that Mr. Reed says, or that the fact is, that in building ships like the *Devastation*, the *Thunderer*, the *Fury*, the *Alexandra*, the *Inflexible*, the *Shannon*, the *Northampton*, and others, that we have thrown away our money? Is it possible that such a question can be seriously entertained by any one presuming to speak on such a subject? And is this critic not trifling with the public when he asks, in the presence of existing Eastern complications, and in view of the supreme

importance to us of a powerful navy at such a moment, whether we should not have been better off if we were without our iron-clad fleet? If he can seriously ask such a question, we cannot seriously answer him.

“He next speaks of Mr. Reed advocating a further expenditure on circular ironclads, which, he says, have only been tested by theoretical engineers. Does he forget that Mr. Reed, before speaking of these vessels, himself made considerable sea passages in them, and wrote careful descriptions both of the vessels and of their performances from his own personal observation? And, let us ask this correspondent, where Mr. Reed has advocated the building of circular ironclads? We have read his letters very carefully on the point, and we cannot find a single sentence in which he asks the Government to build circular ironclads. What he has done is to point out what seemed to him to be the peculiar and special qualities of circular ironclads, and he has asked that the Government and its officers should give serious attention to the facts and considerations which he adduces, and allow them due weight in their future constructions. Mr. Reed may be strongly in favour of the circular ironclads for anything we know, but whatever his view may be on that point, he has strictly limited himself in his public statements, to requesting that the Government would, under its responsibility, give the most careful attention to the subject, and act in view of all the facts and circumstances of the case. We have particularly observed the cautious manner in which Mr. Reed has limited himself in this respect, and we deny the right of this correspondent to put into his mouth recommendations he has never made: for it is one thing to recommend that an important class of ships should be most carefully considered, and quite another thing to recommend that all other forms of ship should be set aside to give place to it.

“The *Standard* writer concludes by asking, whether it would not be well for us to wait for five years before we build any more iron-clad ships. Why, there is no more reason for waiting five years now, than there has been for waiting five

years at any period since the introduction of ironclads, and anyone, who knows anything about the Navy, must be aware that if we had been so senseless as to suspend ironclad shipbuilding for five years, we should at the end of that period have been absolutely at the mercy of other Powers, which never yet have had the pretension to compete with us or to dream of doing so."

The above remarks express with sufficient accuracy all that it seems necessary to say in reply to the letter referred to.

It is proper for me to add that I should have felt disposed to state here with more fulness than I have yet done my views upon the question of circular ironclads, but for the fact that, in compliance with the strongly expressed wish of the Council of the Royal United Service Institution, I have consented to read a Paper there upon the subject.

I have thought it well to append to the text a few foot-notes, chiefly taken, by permission, from Mr. Murray's admirable *Handbook of Russia*, which has just appeared in a new edition, brought up to date, of which I was privileged to see some of the proof-sheets.

E. J. R.

74, GLOUCESTER ROAD,
SOUTH KENSINGTON,
January 1876.

LETTERS FROM RUSSIA

IN

1875.

LETTER I.

Route from England to Nicolaieff — Slowness of Russian Railway Trains — Nicolaieff an Imperial Naval Station — Defences of the River Approach — Arrival of the Grand Duke Constantine — His Eminence as a Statesman and a Sailor — The Emperor and the Navy — Inspections of the Naval Institutions of Nicolaieff — The Circular Ironclad 'Popoffka' *Novgorod* — Armour for Ships a Present and Future Necessity — Long and Short Ironclads — The Origin of Circular Ironclads — Launch of the *Admiral Popoff*: inspection of the vessel afloat by the Grand Duke — Naval Schools — The Leski District — Grants of Land to Officers and of Cottages to Sailors — An Imperial Steam Yacht — Departure of the Grand Duke — Intellectual Activity in Russian Navy — Iron Docks *versus* Granite Docks.

NICOLAIEFF, October 6th.

UNDERSTANDING that the second of the circular ironclads which Russia is building for her defence in the South is to be launched to-morrow at this place, and having the advantage of an invitation which enables me to inspect the vessel and attend the ceremony under the best conditions; having, moreover, a short vacation to spend abroad, I have come from England for the occasion, by way of Vienna, Cracow, and Odessa, arriving here by steamer yesterday in time to take a quiet survey of this very interesting naval station. I propose to send you a short

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account of what I see. The haste in which I must of necessity write, and the holiday nature of the visit, must be my excuse for the desultory character of my observations.

As the disposition to visit Southern Russia is increasing with the continual increase of railway communication in this part of Europe, it may be well to mention that I reached Nicolaieff within six days of leaving London, although breaking the journey three times, staying a night at Cologne, twenty-four hours at Vienna, and nearly twenty-four at Odessa. Satisfactory as this may seem, the time spent in the train was much longer than it need have been, if the great Continental railways, and more especially the Russian, would run express trains for the accommodation of through passengers. Very much of two tedious nights might by that means be saved—viz., that spent between Passau and Vienna, and that between Smerinka and Odessa. The distance between the Russian frontier, Volochisk, and Odessa for example, is but three hundred and forty-two miles, and yet nineteen and a half hours are occupied in performing it by what is called the “fast train,” giving an average speed of less than eighteen miles an hour, owing almost entirely to the number and length of the stoppages. The necessity for going to Odessa at all on the way to Nicolaieff from the West is entirely owing to the unsatisfactory arrangements for passenger traffic on the railways of South Russia, for the distance by train from the junction at Balta to Nicolaieff is considerably less than the combined distance by rail and sea *viâ* Odessa; but the delays on the railway are so great, and the time of arrival at Nicolaieff so inconvenient

(three o'clock in the morning), that the sea route is beyond all comparison preferable even for the most delicate passengers. I cannot help thinking that the administrators of the South Russian railways have fallen into the habit of confusing effect with cause, for when you ask why, with an expensive railway completed to Nicolaieff, so little accommodation is afforded to travellers, you are told that the passengers who use the railway are too few to justify other and better arrangements ; whereas it would be a marvel, indeed, if trains which arrive and leave in the middle of the night only conveyed many passengers to and from a town like this, which is not lighted by gas, and has streets so wide as to put all possibility of paving or macadamizing them out of the question.

Since the fall of Sebastopol, twenty years ago, Nicolaieff* has been the principal station of the Imperial Navy in the Black Sea, but the treaty of 1856 so greatly reduced the naval force

* McCulloch's *Geographical Dictionary*, edited by Mr. Frederick Martin, gives the following account of this town :—

“ Nicolaieff, a town and river port of European Russia, government Kherson, at the confluence of the Ingul with the Bug, about twenty miles above where the latter falls into the æstuary or limen of the Dniepr. Population, 33,504 in 1858. Nicolaieff was founded in 1790, and was intended to be a great naval depôt, and the station of the Russian fleet in the Black Sea. It stands on an elevated healthy situation, covers a large extent of ground, and is extremely well-built. The streets are wide and regularly laid out, and the private

houses, which are mostly of brick, have a handsome appearance. Among the numerous public buildings may be specified the new church or cathedral. The admiralty, the town-house, the marine barracks, and the naval hospital. In the vicinity is an observatory. The admiral commanding the fleet in the Black Sea resides here ; and here, also, are the various offices connected with this department of the service, with schools for the instruction of pilots, ship builders, and naval artillery. Nicolaieff owes its existence to its river, which has its entrance without the bar of the Dniepr, and water sufficient to float large ships up to the town.”

of Russia in the South that a superficial glance at the town and port suffices to show that the very extensive accommodation of the place, in the form of naval buildings and appliances, is out of all proportion to present requirements. I much misinterpret, however, the indications which I have observed here, and on the way here, if Nicolaieff is not destined to become hereafter a much more important place, in a naval sense, than it now is. On passing yesterday into the broad estuary of the Boog* between Kinburn and Otchakoff, I noticed that a midwater fortress is being constructed on a very large scale between those two points. The river itself, as we ascended it, was found defended at points evidently well chosen with reference to its channels and to its natural and artificial obstructions, with extensive earthworks armed with powerful modern ordnance in abundance. In the port of Nicolaieff itself was lying frowning at anchor, among a half-dozen small vessels of the Imperial Navy of the usual type, that most remarkable of all modern engines of naval war—it is idle to speak of *Monadnoks* and *Devastations* and Popoffka as ships—the first circular ironclad of Russia, the *Novgorod*. I have some expectation of being allowed the privilege of making a trip on the Black Sea in this vessel, and certainly shall visit her in port, and therefore will not say more of her at present, because if I am so fortunate as to witness her performances in open water I shall hope to send you the results of my observations. It is sufficient here to say

* I have preferred this mode of spelling the word to the more usual one (Bug), as the former gives to English readers unacquainted with

Continental pronunciation a better indication—although by no means an adequate one—of the name of the river.

that the putting together of this vessel at Nicolaieff, and the complete construction of the second of her kind at the same place, are tangible evidences of the important uses to which this well-protected port is to be put—I say well protected, because the dockyard, or the Admiralty as it is here called, not only has its approaches defended, as already mentioned, but it likewise has the advantage which results from the river making a large sweep away from Nicolaieff as it is approached, and returning to it behind the shelter of elevated ground. In point of fact, the dockyard is not on the Boog at all, but on the Ingul, just before that river at its deepest part flows into the far larger stream. The Boog is a magnificent river, as may be readily inferred from the fact of the Imperial Government establishing its greatest southern naval port nearly fifty miles from its mouth.

The second Popoffka—which designation the Emperor of Russia has applied to Admiral Popoff's circular ironclads—is to be named after her distinguished inventor, and on approaching the town yesterday one would have soon seen, if he had not been already aware of it, that her launch was to be celebrated as a great event in Nicolaieff. No less a personage than his Imperial Highness the Grand Duke Constantine, brother to the Emperor, President of the Council of the Empire, and Lord High Admiral of the Imperial Navy, was to be present, and suitable preparations for his reception were obviously in progress. The men-of-war at anchor were in the best possible order; the Popoffka *Novgorod* had her frowning features as much relieved as the glistening whiteness of her

chimneys, and a brush of fresh paint over her superstructures could relive them. The Government pier was put into the best condition, and on it was being completed a gaily-coloured pavilion, beneath which his Imperial Highness might require to stand for a few moments while receiving the officers of the port.

This may not be an improper time—before the arrival of the Prince—for saying a few words upon this distinguished member of a distinguished family. It has been on a few former occasions my good fortune to see something, and to learn much more, of the Grand Duke Constantine* of Russia, and it is not without good reason that I say that his Imperial Highness is one of those exceptional men who, by the greatness of their natural powers, the breadth and depth of their knowledge, and the zeal with which they devote themselves to the public service of their country, compose the strength and insure to a

* “Constantine Nicolæwitch, the second son and fourth child of the late Emperor Nicholas, Grand Duke of Russia, titular and Grand Admiral of the Imperial fleet, was born September 21st (or, according to the old style which Russia retains, September 9th), 1827. He was educated with great care for the naval service, and had for his tutor Admiral Lütke, the circumnavigator of the globe, under whose orders the young prince subsequently served, and acquired the rank of ‘post-captain in the Russian navy,’ as he thus subscribed himself at the model-room of the Admiralty at Somerset House, during his visit to England in 1847. In addition to being Grand Admiral of Russia, the Grand Duke

Constantine is Commandant of the 4th brigade of Infantry of the Guard, Colonel of the regiment of Hussars of the late Grand Duke Michael Paulowitch, a Member of the Council of Military Schools, and President of the Grand Council of the Empire. In 1857, the Grand Duke paid visits to the courts of England and France, and inspected the naval arsenals of both countries. At the outbreak of the Polish insurrection, in 1862, he was appointed Viceroy of that principality, but he resigned his post in a few months. In January 1865, he was appointed President of the Council of the Empire, and in 1871 he paid another visit to England.”—Abridged from *Men of the Time*.

great extent the durability of the Imperial form of Government. Outside of the naval services of Europe the Grand Duke Constantine is well known as one of the most remarkable public men of Europe, for his wide acquaintance with the nature and operation of those forces which urge forward the civilisation of the time. His influence upon the progress of Russia in some of its most meritorious advances has been palpable, and universally recognised ; but it may perhaps be questioned whether his accomplishments as a sailor and his intimate acquaintance with the practical progress of naval science are equally well known. Yet so great are these that it may fairly be questioned whether the Russian Navy does not at this moment, under his auspices, exhibit more spontaneous intellectual activity than any other Navy of Europe. Of course it will be easy for those to question this who judge only by material and immediate results, because Russia is unable to expend upon her Navy those vast sums which alone can in these days insure the rapid increase of naval armaments. Moreover, Russia is steadfastly endeavouring to develop its own means of producing ships and guns, and prefers at times to wait even for a year or two rather than substitute for this policy the readier method of resorting to other countries for the satisfaction of all its requirements. Later on, either in this letter or in a future one, I shall give more or less direct proofs of the thoughtful activity of the Russian Navy, and this is unquestionably the fruit of that encouragement which all the best men of the Russian Navy receive from its Imperial head. And what makes this fact the more significant and important

is the circumstance that this encouragement of naval progress, in the higher sense of that term, does not stop with the Lord High Admiral, but receives its highest expression in the person of the Emperor himself. The frequency with which his Majesty publicly manifests on the Neva his close interest in naval matters is well known, and since I arrived here I have heard of another example of it in the fact that only a few days since at Sebastopol, in the south of the Crimea, the Emperor inspected the *Novgorod* and made a trip in her to enable him to form his own judgment upon her.*

The Grand Duke Constantine attended by Admiral Popoff

* Another notable instance of the interest taken in the navy by the Imperial family was afforded after these lines were written, but before they were published, on the occasion of the return of his Imperial Highness the Grand Duke Cesarewitch from Denmark to Russia. On reaching Cronstadt, after a sea voyage, and when the journey to Tsarskëe Selo had yet to be made, the Grand Duke Heritier broke away from all the well-contrived arrangements that had been made for his reception and comfort, to visit a vessel of war that was approaching completion and about to leave the port, evincing great interest, I am informed, in all that concerned the efficiency of the ship, and the well-being of the men and officers.

I can, from personal knowledge, speak of the deep interest felt by his Imperial Highness in naval affairs, and of the great liking he has for the sea, having had the distinguished honour of con-

versing with him more than once upon naval matters. His position as heir to the throne of a vast military empire has devoted him primarily to the army, but there cannot be a doubt that the future Emperor of Russia, whatever may be his military genius, is a sailor at heart. I may also state as a fact that of all the many eminent persons, at home and abroad, with whom I have at various times discussed the details of ship construction and equipment, there is not one whose desire to see the common seaman comfortably and carefully accommodated has equalled that of his Imperial Highness. Next to him I place Admiral Lord Clarence Paget, who, when Parliamentary Secretary to the Admiralty, lost no opportunity of impressing upon me the elevating influence upon the seaman of good accommodation, and of abundant light, air, ventilation, and all practicable comforts.

and by a few members of the Naval Staff of his Imperial Highness, arrived in the yacht *Livadia* at 11 o'clock this morning. Admiral Arkass, Commander-in-chief of the Black Sea Fleet, and Rear-Admiral Andraeff, the Superintendent of the Dockyard, went off in the steam-launch to the former to meet him and to escort him on shore. He landed at the Admiralty Pier, which was crowded with officers of all ranks in uniform, and with the principal inhabitants, and profusely hung with flags, presenting a very animated appearance in the brilliant sunshine of this bright atmosphere. The Mayor and Corporation were present to offer bread and salt (in the form of a gigantic bun) as the usual emblems of welcome and hospitality, and it was pleasant to see the cordial manner in which the Grand Duke was received by all, and which he in turn received those who awaited him. In one instance his salutation of an old officer was especially warm, and on inquiry I found that this very old officer—one of the few full Admirals of the Russian Navy—was thirty years ago the captain of the ship in which his Imperial Highness served as midshipman.

No time was lost by the Grand Duke in commencing his day's work, which was a somewhat severe one. He first drove to the Observatory, every room of which he inspected, in each case making the most minute and searching inquiries, especially as regarded the working efficiency of the arrangements and apparatus. He next visited the school in which young gentlemen are trained as naval and navigating officers for the Imperial Navy, entering every class-room, putting numerous questions to both masters and students, examining the charts, &c., which were

executed in the school, and dropping words of generous approbation and encouragement here and there, which will probably bear fruit in after years. At this school the students were called in to their luncheon while his Imperial Highness remained, and the opportunity was taken by him of tasting and testing the food supplied. He next visited an extensive training-school for girls, where the various classes were hastily examined, and where, after a singing class had sung the National Anthem, "God preserve the Czar," the Grand Duke distributed gold and silver medals among the pupils. After luncheon at the Palace, his Imperial Highness next visited the dockyard, going carefully through every workshop, and giving incidentally abundant evidence that, although two years have elapsed since he last visited this port, his control of it had not been a nominal one only, but a most substantial one, influencing the construction of new buildings, the purchase of new plant, and the appropriation of labour in no small degree. The principal object of interest was the *Admiral Popoff*, the second of the circular ironclads which is to be launched to-morrow, of which I will speak hereafter. Some forty to fifty of the senior officers of the port afterwards met his Imperial Highness at dinner at the Commander-in-Chief's, and the public proceedings of the day have closed with a general illumination of the principal part of the town, and more especially of the long and spacious promenades which overlook the junction of the Ingul and the Boog, and finally with a grand display of fireworks for naval and military purposes, of which a large Government manufactory exists here.

It was a striking incident to see this brother of the Czar of all the Russias, and next to the Czar the most powerful man of business in the Russian Empire, moving among the crowd in the simplest manner, without a single soldier or policeman to clear or keep a path for him, and obviously the object of what cannot be fitly expressed by any colder term than the affection of the people. It may be interesting to state that after the fall of Sebastopol, in the autumn of 1855, the Czar and his three brothers took up their residence at Nicolaieff, and remained there for two months. I have the best authority for saying that this circumstance established peculiarly friendly feelings between the Imperial Family and the inhabitants of Nicolaieff, and, in view of their courteous and cordial good conduct to-day, one may fairly consider this feeling to be thoroughly reciprocal.

Since writing the above I have availed myself of a spare hour or two to visit the *Popoffka Novgorod*, of which I already knew pretty well all that can be learnt from drawings and written descriptions, but which I had not before seen, except from the outside; and subsequently I went carefully over the *Admiral Popoff* upon the stocks, where she could be inspected much more efficiently than will be possible after the launch to-morrow, when not only the bottom, with its multiplicity of false keels, but also the six screw propellers and the one very powerful rudder, will, of course, all be submerged, or nearly so. Having a tolerably intimate acquaintance with the iron-clads of our own and other navies, I certainly would, after seeing these *Popoffka*, advise Colonel Strange and other

gentlemen who consider that the building of ironclads in England should be stopped, to suspend their opinions on the subject until they have given some consideration to these Russian vessels. If armour is to be abandoned, it must follow that our officers and men must be sent to fight our enemies with unprotected steam boilers and powder magazines beneath their feet ready to blow them into fragments if penetrated only by a single shot or shell. Nothing but hard necessity will justify this, and that necessity can only arise after all reasonable means of carrying armour have been exhausted. In considering this subject, I wish to give the fullest value and significance to the fact that the *Vanguard* has been sunk by a ship exactly like herself, and by a single blow. Of course I can only hope, as indeed I believe, that in a naval engagement with due preparations made, the facts disclosed at the court-martial respecting the state of the water-tight doors, the delay in closing them, the circumstance that the communication between the engine-room and boiler-room—a matter absolutely essential to safety—was too long delayed, and so forth, would not be possible. I also hope that the particular locality and circumstances of the blow of the ram in this ship had much to do with the danger and difficulty of the case. Still, our naval constructions, like all our other public works, must, in a primary sense, be the results of public confidence, and it cannot be doubted that such a loss as that of the *Vanguard*, following the accident to the *Mistletoe* has seriously shaken public confidence in our Navy in more senses than one, although in the case of the *Vanguard* our loss

is partly balanced by a demonstration of the tremendous power of that ram with which I insisted upon furnishing every ironclad ship of my design. Here again, however, we have in this very power of the ram cause for most thoughtfully considering what is to be the future development of ironclad construction, and that cause is enhanced by the further reason which arises from the increase in the power of the gun.

Now the first thing of which I became profoundly convinced when I closely applied my thoughts to the design of ironclads was the absolute necessity of setting altogether aside in such ships the usual forms and proportions of steam vessels. I found that long ironclads were blunders in almost every sense, involving comparatively thin armour, light guns, great size, great cost, great unwieldiness, and great exposure to every form of above-water and under-water attack. The moment I entered upon office, therefore, I brought down the length of a first-class ironclad from 400 feet to 300 feet, increased the thickness of armour, doubled the size of the guns, saved 100,000*l.* in first cost, and made the *Bellerophon* the handiest ship, and, therefore, the least exposed to attack, in the whole Navy. Fortunately this great change was so successful as to debar for ever any responsible persons, however strong their prejudices, even from attempting to revert to great length in such ships. In certain cases I succeeded in carrying the same principle still further, but to nothing like the extent which I could have wished. The time arrived when it seemed undesirable to press one's views further from within the

Admiralty, and I resigned the Chief Constructorship.* But in Russia there was an officer who sympathised with these

* It may not be out of place here to cite a few passages from my work on *Our Ironclad Ships*, published by Mr. Murray in 1869. They will serve as an answer, in part at least, to those who suppose that I am now for the first time advocating an extreme reduction in the length, and an extreme increase in the breadth of ships:—

“The efficiency of its ironclad fleet is of foremost importance to a small, isolated, maritime country like this, anchored on the edge of a continent like Europe, entrusted with the care of world-wide interests, and charged to maintain its power upon the sea at a time when the spirit of invention is setting at naught all past systems of ocean warfare, and mocking at every trace and tradition of the times when we won our naval renown. In proportion as the past is prolonged into the present, we are weakened and endangered; in proportion as the novel capabilities of iron and steel are developed, we are strengthened and made safe. This is no time, then, for clinging to any type of ships, or any feature of naval construction, merely because it is old and accustomed—no time for rejecting things because they are new and unaccustomed. But, on the other hand, this being pre-eminently a time of risk because of the transitions we are passing through, it is pre-eminently a time for making our great experiments with scrupulous care, and for wasting nothing on methods which *cannot* succeed.

“Scientific writers upon the forms and resistances of ships have generally recommended the adoption of forms of least resistance, and have taken no account whatever of the effect which the weight of the material in the hull should have upon the form of a ship. The most cursory glance will, however, be sufficient to show that this generalisation cannot include the designs of all ships. Take, for example, the vastly different conditions to be fulfilled in a merchant-ship and in an ironclad war-ship. The former is designed to carry cargo economically, and the weight of hull forms a comparatively small fraction of the total displacement; while the latter is in reality a floating fortress, constructed with a view to efficiency in powers of offence and defence, and carrying great quantities of armour, the weight of which depends upon the form and proportions of the hull. The merchant-ship may, with advantage, be made long and fine, since the requisite carrying power can be secured as well by means of great length as of great beam, and the proportion of speed to engine power is thus increased. In the ironclad, however, any addition to the length leads to a corresponding increase in the area of the surface to be armoured, and in the unproductive weight to be carried; while a reduction in the length leads to a considerable decrease in that area, and in the total weight of armour.

“The impossibility of correctly prescribing any general form of ship, in

views of mine to the fullest extent, who saw clearly enough what would be their ultimate development, and who found in the circumstances of the Russian Navy ample reason for their immediate adoption in an extreme form which I had never contemplated. This is Admiral Popoff's own account of the origin in his mind of circular ironclads,* and having obtained

disregard of the armour, will exhibit itself even more strikingly if we consider, independently, one end of a ship, say the bow or entrance. To fix our ideas, we will take the case of the *Minotaur*, for which ship it has been found by actual calculation that in still water the weight of the first 80 feet of the bow exceeds its displacement by about 420 tons. This excess of weight must clearly be floated by the central part of the ship, where the buoyancy exceeds the weight; and the length of this part being 250 feet, while its mean breadth is about 56 feet, its immersion must be increased by about 13 inches, in consequence of the unsupported weight forward. This additional immersion increases the area of the midship section, which has to be propelled through the water by from 60 to 65 square feet. Now, let us imagine this bow to be so shortened and shaped—on the one hand increasing its buoyancy, and on the other diminishing its weight—as to produce an equilibrium between its total weight and buoyancy. No doubt by making it bluffer we shall increase its resistance to motion through water, but we shall at the same time lighten the burden upon the central part of the ship, and reduce the total area of the

midship section to be driven as well as the total weight. It is easy to see that by this means we may succeed in getting the same speed with a given power as would have been obtained by employing the longer and finer, but much heavier bow. This is the essence of the principle which I have laid down, and carried out in practice. It may, perhaps, be not amiss to mention that I have myself devised plans for carrying extremely heavy armour, which it has not been yet necessary to divulge, but which will come into active play when we have attained to the use of such thicknesses of armour as are now deemed too great for even a moment's consideration by those who think superficially upon this subject.” —*Our Ironclad Ships. By E. J. Reed, C.B.*

* Since this was written and published, Admiral Popoff has addressed to the *The Times* the following letter, from which I omit a paragraph that does not bear upon the point under notice here :—

“In consequence of the discussion which has arisen in your columns about the invention of circular ships, I ask you the favour of the insertion in your valuable paper of the following.

“All this discussion results from the

for them the approval, at least for special purposes, of his Government, I have to-day been able to inspect a finished circular vessel, carrying 11-inch armour and two 28-ton guns

fact that the very great, and consequently the very simple, idea of Mr. Reed is not sufficiently appreciated in the Press. He said many years ago that by shortening the ship we diminish the extent of the surface which must be protected by armour, and by broadening the ship we increase the displacement or power to carry the armour. He said also that very moderate increase of steam power was needed to give to the short ship the same speed as to the long one, and in some cases even not any increase. Nobody now builds long ironclad ships, but nobody publicly recognises the immense importance of the change which was thus effected. I claim to have understood Mr. Reed from the first, and before a great many others. Three gentlemen were working with me at that time: Messrs. Goullaieff, Mordvinoff, and Ermakoff; they can certify this, as it is already done by Mr. Goullaieff in his letter in *The Times* of the 29th ult. As an additional proof I can say that when I was in England in 1870, and Mr. Reed, after he left the Admiralty, asked for my photograph, I thought it was my duty to give it to him with the following inscription:—‘To my principal teacher in Naval Architecture, by whom this great art has been cleared up from senseless mysteries and prejudices.’

“When my Government found it necessary to build ironclads for shallow water and special purposes, and as in-

expensive as possible, I began to think about this question from the point of view of Mr. Reed. As a consequence, I shortened the ships and increased their breadth, and after investigation carried the principle to its extreme limit, making the breadth equal to the length. Now everybody can see that I did not invent a round ship, and it is not that which I claim; that the waterlines of my ship became circular is quite true; but I claim to be the inventor of a ship which, being equal in length and breadth, has the greatest power of carrying the weight on a given draught of water. When the first vessel of this design was afloat at Nicolaieff, and I could get a photograph from her, I sent immediately to Mr. Reed the first copy, with an inscription, attributing to him the origin of the idea. These are the facts known by many persons.

“After this confession nobody can say that I claim for myself alone the invention of the ships known by my name, for the course of ideas which resulted in them was originated by Mr. Reed, and only its further development was mine.

“To this I must add one word more. With proper sanction, I recently invited Mr. Reed to see the launch of the second *Popoffka* and the trial of the first one, because I was sure that he, as the originator of the idea which led to them, is the most proper person to judge the qualities of these vessels.”

on a displacement of less than 2,500 tons, and a draught of water of less than 13ft., and to-morrow is to be launched a second ship to carry what is equivalent to 18 or 19-inch armour, and two 40-ton guns, on a displacement of 3,500 tons, and a draught of water still less than the other. It is quite true that these are not fast ships—they have not been built for speed; but as war vessels, carrying such armour and such guns on a light draught of water they are full of interest and significance. I have connected the origin of these vessels with my own earlier design, because Admiral Popoff insists upon that being a true account of it; but I must do the gallant officer the justice of saying that the admirable manner in which these ships have been built, and the *Novgorod* completed, are the results of his own ideas and labours only, seconded, as he undoubtedly is, not only by a staff of clever young officers of his own choice, but also by officers of the Dockyards which have built these vessels. After a general survey of the *Novgorod*, I was shown the manner in which the large 28-ton guns are worked. These guns stand in an open-topped fixed turret, and are each worked by seven men only. The loading arrangements, the running out and in, the elevation and depression, and the training of these guns, are all of the simplest character, and insure great rapidity of action. I observed one quality which these guns possessed, which our guns in revolving turrets do not possess. While capable of being fired in parallel directions like our own guns, each has an independent action for training, so that, within certain limits, they can be directed at different objects. The *Novgorod* is

propelled by six screw propellers, driven by parallel shafts, three on each side of the centre line; and while furnished with a powerful rudder, under the action of which she revolves, I am told, with great rapidity, it is obvious that, in the event of accident to this rudder, she could be steered by the screws alone with the greatest ease and rapidity. The starting and stopping gear for each set of three engines is brought to one point, so that one man has them under perfect command. The accommodation of the *Novgorod*, for officers and men, is very good indeed, especially for a vessel essentially of the Monitor type as regards height of freeboard. Much of this accommodation is secured by means of a deck-house superstructure forming a forecastle forward and extending down the middle of the ship to the stern. But even that part of the cabin accommodation which is below the armoured deck is well lighted and ventilated, primarily by means of ample deck openings through and around the fixed turret, and also by means of deck illuminators. Throughout the construction of the vessels below, wherever water tightness of bulkheads and frame-plating is not an object, much skill and pains have been expended in providing ample openings for the free circulation of air, and, so far as possible, of light. All the arrangements for carrying and working the anchors and cables are satisfactory, not differing very materially from those of ordinary ships.

Of the seaworthiness and speed of this vessel I shall speak hereafter; but here we obviously have a form of ironclad of light draught, of great offensive and defensive powers, of extreme handiness, of comparatively very inexpensive construction, and

withal a good habitable ship for officers and men. In order to indicate the value of such vessels to Russia, I would remind you of one feature only of the great war of 1854-56. Every one who remembers that war will be able to recall the ease with which our light-draught unarmoured vessels and gunboats carried insult and injury around the shores of the Sea of Azof. No vessel was too contemptible in size and power for this purpose. But I should like to know what class of vessels now exists either in the English or the French Navies fit to perform a similar service in the presence of the *Popoffka*. Not only have we no vessels capable of entering shallow waters and there engaging the *Novgorod* and the *Admiral Popoff*, but I say without hesitation that such vessels cannot be produced possessing the necessary capabilities unless it be either by constructing vessels substantially like themselves, but still larger and more powerful, or else by building far larger and more expensive vessels of previous types. But it may occur to some to ask what chances the Russian circular ironclads would have against rams and torpedoes. I am bound to answer that the circular form of construction lends itself much more readily than any other which at present exists to defence against these forms of attack. Both the existing circular vessels have circular bulkheads running completely round the vessel at some distance from the side; and if the development of ram and torpedo warfare should show that this distance may with advantage be increased, it will be perfectly easy to increase it, and to place a second bulkhead within the first (and a third, if necessary, within that), so as to carry the subdivision into cells

to almost any reasonable extent. Certain it is that no form of ship presents facilities for subdivision equal to those offered by the *Popoffka*. If to this fact we add the further one, that in this form of ship, owing to the light draught, the armour may be carried, if necessary, down to the very bottom of the vessel, we shall see how great reason there is for looking in the direction of these vessels for the further development of ironclad ship-building.

October 7th.

The second circular ironclad was launched to-day at noon with great success. She was named the *Admiral Popoff*, after her distinguished designer, by the express and spontaneous desire of his Majesty the Czar, which is in itself a significant indication of the manner in which naval design and naval effort are fostered by the Crown in this country. After what I have written of the *Novgorod* it is needless to say much of this vessel, except that she possesses powers of offence and defence greater than the other in more than the proportion of her increased size. The *Novgorod* is 101 feet in diameter, and of 2,491 tons; the *Admiral Popoff* is 120 feet in diameter and of 3,550 tons. The draughts of water of the two vessels are not materially different. The armour of the *Novgorod* is about equivalent to 11-inch plating; that of the *Admiral Popoff* to about 18 inches. The horse-power of the former vessel is 480 nominal, and of the latter 640. Each has six screw propellers, but in the latter vessel two of them are of much larger diameter than the others, and have their shafts situated lower down, so that in deep water these screws will sweep through

the water much below the bottom of the vessel, while in shallow water they will be kept at rest in a position which keeps them above the keels. The deck is on each ship plated with $2\frac{3}{4}$ -inch armour and has great curvature, so that although the nominal freeboard is in each case not more than about 18 inches to the top of the side armour, the actual surplus buoyancy is far greater than this would indicate. This is the first armour-plated ship afloat carrying armour of 18 inches, and intended for guns of 40 tons (more exactly, of $41\frac{1}{2}$ tons.) After the launch, the Lord High Admiral (the Grand Duke Constantine) went over every part of the ship, to examine for himself the watertightness of the hull, and to discuss other details of the vessel. The pumping and ventilating arrangements, the subdivision into compartments, the propelling apparatus, the cabin dispositions, all seemed alike matters for his personal inquiry and of his intimate knowledge. In a subsequent visit to the dockyard, and to the various shipbuilding machine shops and stores, it was interesting to find this Emperor's brother, and head of the business of a vast empire, acquainted with the minute characteristics and details of radial drills, horizontal planing machines, rectangular punching machines, cast steel cutting tools, anthracite coal, the coking properties of certain coal in dust, and other like matters.

After luncheon his Imperial Highness visited the Naval Barracks, where his own Black Sea equipage, the 1st, and the Duke of Edinburgh's, the 2nd, were in part located. The Duke of Edinburgh's was first visited. Every part of the barracks was inspected. In the school-room, which was also

also a reading-room, were various simple publications, and, among others, an illustrated sheet, the *Russian Workman*, much resembling and probably based upon the *British Workman*. The Grand Duke remarked that this kind of publication was new in Russia, and that the instruction given to seamen would greatly improve them and benefit the country. He also remarked with much satisfaction a shrine, of which the pillars and canopy were exceedingly well carved in wood, and which had been voluntarily executed by a seaman of the fleet. The next proceeding was to lay the corner-stone of a new building which is being erected by the Benevolent Society of Nicolaieff. This was done by the Grand Duke himself, after a picturesque preliminary service by two priests of the Russian Church, during which a small band of choristers chanted very pleasantly. It was easy, even for one who knows next to nothing of the language, to hear that the concluding part of the service comprised invocations on behalf of the Czar and other members of the Imperial Family, including, of course, the illustrious guest of the moment. This ceremony was, on the whole, a very simple and pleasing one, not the least pleasing part of it being the "eyes of shining expectation" which beamed along every step of the Grand Duke's path, from gospodin and peasant, from men and from women, from old and young alike. This has been to me a most striking feature of this visit, for everywhere, and among every class of persons, the looks with which the people greet his Imperial Highness are not at all those of mere curiosity or common excitement, but those with which child awaits father, or friend looks for friend.

If the people of Nicolaieff are not very unlike those of other Russian towns, the notion of the Russian people being held in military subjection by an Imperial House is the very opposite of the truth. In all this manifested loyalty, the Grand Duke Constantine himself sees nothing, or will see nothing, but the love of the people for the Emperor, and no doubt this is the basis of the whole; but, at the same time, it is impossible to witness what transpires, and to mix with Russian officers and others, without seeing that the Grand Duke Constantine himself is much and generally beloved. It should be remarked that the building of which the corner-stone was thus laid is to be an asylum on a large scale for the very old and the very young, for lying-in women, and so forth. After the ceremony, a neatly-bound Report of the Society, a lithographic plan of the building in a case, and a silver plate recording the circumstances of the occasion, were presented to a few of the principal guests by the President of the Benevolent Society, Captain Golinischoff. The next business was to visit the New Naval Hospital; and after going carefully over every room and ward in it, I consider it unequalled by any hospital that I have seen. Although one has so often in Russia, and even in the noblest palaces, to deplore the want of fresh air, the ventilation has in this case been made a primary object, and has been most successfully attained. Even those parts of the building which usually are more or less offensive in all establishments for the residence of large bodies of men, are in this hospital, and in the seamen's barracks also, kept perfectly pure by a system of down-draught ventilation, resulting from furnace-draught.

This arrangement was elaborated by the Grand Duke himself, after many experiments, and with the aid of a French engineer, whose system corresponded with his own views in many respects. His Imperial Highness visited each ward of the hospital, speaking with the patients in special cases, and giving directions on such questions as arose. I am informed by those who have had long experience of the Lord High Admiral, that it is highly improbable that any one of these personal directions of his would be neglected, and the neglect escape observation on his next visit. After leaving the new hospital he proceeded, contrary to the expectation of the officials apparently, to an obscure portion of the old hospital, which was partly in use still, and finding there evidences of neglect, did not fail to express his displeasure, rejecting all excuses, and insisting upon amendment with a truly Carlylean directness and force. A girls' school for the daughters of seamen, partly supported by the State, was next inspected, and a very practical school it appeared to be. Elementary education was not neglected, but the greater part of the time of the children is devoted to needlework, cooking, and other like occupations. Some of the girls, indeed, many of them, after learning plain needlework, pass on to various forms of embroidery and working in silk, which is produced to some extent at Nicolaieff. The produce of their work is sold, and the results accumulated in the hands of the school managers until the girl leaves the school, which she often does with a substantial sum of money for starting in life. In some cases the poorer class of officers get their daughters admitted to this school in the absence of candidates from

among the children of seamen. These inspections closed with a visit to one of twenty-five small charity schools of Nicolaieff. Out of a population of about sixty-thousand, three thousand children are under training in this way, free of charge, the whole cost of their education being met by voluntary contributions. This evening a grand ball was given at the Naval Club, which, with its approaches, was brilliantly illuminated. I will only say of this festivity that the naval officers made admirable stewards, that there was a fair proportion of pretty women present, and that the Imperial Prince, who was the centre of all interest, distributed his smiles and recognitions with as much graciousness as if he had spent his life in gaieties instead of being one of the most laborious of men.

October 8th.

Having almost unconsciously been drawn by the interest of the subject into recording the incidents of the Grand Duke's visit, I may as well complete the account by briefly mentioning the proceedings of this third and last day. After transacting business for some hours with the Commander-in-Chief, the Grand Duke Constantine proceeded about noon to inspect the rockets and other life-saving appliances of the Life-boat Institution, which has been recently formed in Russia, and has greatly extended its operations under the benign auspices of the Czarevna. The line-carrying rockets are constructed in Russia with some improvements which I must not attempt to detail here, but which were fully discussed by the Grand Duke. After early lunch he drove to Leski, which is the western

district of Nicolaieff. It consists of three principal features, two of which are of considerable interest. The first comprises a large extent of land, divided into large square plots, with a small cottage built upon each plot. These cottages are let rent-free to sailors disabled by wounds or by age, the plots upon which they stand being cultivated as gardens. The system began after the war of 1854-56, the primary object being to provide for some of the disabled soldiers ; but as the lands all belong to the Navy Department, the privileges, as they fall vacant, are chiefly awarded to seamen, the selection being carefully made subject to the approval of the Grand Duke, and ultimately of the Emperor. Several of these cottages, occupied by old sailors, were visited by his Imperial Highness, to the intense pleasure of the old fellows and their families, to whom many questions were put, especially as to the cultivation of the gardens and the value of the produce. In some cases as much as 20*l.* or 30*l.* a year is made in this way, although the land is poor and sandy, and suffers in summer from want of water. There is a little school-house among these cottages. The second feature of the Leski quarter is of somewhat similar nature to the first. In this case still larger plots of land are granted as freeholds to naval officers, on the condition that in the course of four years they shall build houses upon them. If they fail in this, the land reverts to the State. His Imperial Highness pointed out that there was a double advantage in both these arrangements ; for while, on the one hand, old officers and seamen were substantially benefitted, on the other, the State had the steppe brought into cultivation, which

improved the general character and property of the town and port, and prevented the sand of the steppe from being drifted by storms into the river Boog, which sweeps round Leski between Nicolaieff and the sea. The remaining part of Leski is a very pleasant park, which is well-wooded, prettily laid out as pleasure-ground here and there, and has within it springs of pure fresh water, from which the supplies for the fleet are drawn. The late distinguished Admiral Greig was the originator of the Leski quarter of Nicolaieff. The inspection of Leski completed, the Grand Duke next visited the *Voin*, a corvette which is being fitted out for gunnery training, and has, in addition to a special armament, a revolving turret constructed in wood, for the instruction of the seamen in turret gunnery. On board this vessel I saw an improved form of revolver with which the Imperial Navy is now supplied, and which embodied, among other improvements, one suggested by the Grand Duke, and which although treated very lightly by him, seems to me to have much value, inasmuch as, while improving the hold of the hand upon the revolver, it brings the full strength of the middle finger into play for the purpose of securing the connection between the chamber and barrel during the discharge*. In returning from the *Voin* the Grand Duke called at the Imperial yacht *Livadia*, which is for the service of the Emperor in the Black Sea. This is in every sense of the term a splendid vessel. Its upper deck cabins

* If any reader is disposed to see in the frequent mention of the inventions and improvements of his Imperial Highness a disposition on my part to give undue prominence to them, I would assure him that I have suppressed all reference to many which came under my notice.

and fittings, and all strictly Imperial apartments, are modelled after the Palace of Livadia in a mixed Moresque and Oriental style, all the plate, glass, &c., having been expressly designed and manufactured for the ship. This yacht, like some other of the Emperor's vessels, is furnished with a powerful magneto-electric light at the bow, which is said to be very effectual in lighting the path of the ship a long way in advance of her. During these inspections afloat, the open boats of the fleet were engaged in sailing matches, which furnished all the world of Nicolaieff with another excuse for coming out to greet the Emperor's brother, which they did most heartily. It was past 5 o'clock before these inspections were over, and at 7 o'clock the Grand Duke was to start for St. Petersburg. In this brief interval he contrived, however, to dine with the Commander-in-Chief, who entertained also the Staff and a privileged guest or two, to distribute the prizes to the winners of the races, and to take formal leave of the chief officials of the port. Before 7 o'clock he was speeding on his way to the railway station along a road much more than a mile long, lighted throughout with simple and extemporised, but, nevertheless, picturesque, arrangements of lamps, and a curious and pleasing sight it was to see over the whole route the excited faces of the people of all orders peering for a last look at their Prince, and only not cheering as our British people cheer, because they don't know how to do it. Such short, hoarse cheering as they can give was not by any means wanting. At the railway station every available spot was crowded, notwithstanding that it was already night, as regards the outer darkness, and truly affec-

tionate was the leave-taking of these people, their display of feeling being made the more remarkable by the perfectly simple manners of the Prince, whose natural quick movements and sharp address tend much to discourage the manifestation of public admiration.

Before closing this letter I will revert for a few moments to a remark which I previously made respecting the evidences of intellectual activity which are being developed under the Grand Duke's auspices, and under those of the Emperor—for I am told by those who know his Majesty well, that the direct personal encouragement which he is continually giving is exerting a great influence upon the profession. One very eminent officer has said to me more than once at Nicolaieff,—“I have had the honour of knowing the Emperor more or less for twenty years, and sometimes have seen much of him; I also claim to know somewhat intimately the history of my own and of other countries; and I venture to doubt whether any Monarch has ever equalled the Emperor Alexander in the art, or, if you prefer, in the nature, of exercising his great influence on behalf of what is really good and excellent, and in doing this with a quiet and simple graciousness which is felt by all. Even when he acts upon the advice of others in conferring distinctions for real merit, and in like matters, he makes the act all his own by the manner in which he does it.” But now for an illustration or two of the results, which I will give briefly. I have met at Nicolaieff a young officer, Lieutenant Makaroff, whose name is already known to the English public through his invention of safety-mats for stopping holes in ships' bottoms

which I cannot but think might have been of service in the case of the *Vanguard*. This officer has of late years been engaged, under Admiral Popoff, in simplifying and improving the pumping arrangements of ironclads, and I do not hesitate to say that he has effected great improvements, and that the pump service of some of the Russian ironclads now building, including the second circular ship, will give evidence of substantial progress in this important branch of construction. At the table at which I pen these lines another officer of the Staff attached by the Grand Duke Constantine to Admiral Popoff, Lieutenant Raskasoff, is expounding to an engineer officer his proposed hydraulic gun-carriage, which I have carefully looked into, and which, to say the very least, is second to none that I have seen. I consider it, in fact, the best. It will be carried out in the new circular vessel. Again, before leaving England last week, I met a third officer of the same Staff, Lieutenant Goulaeff, who had proceeded to England to take part in the construction there of an iron dock for Nicolaieff, which is to be built upon the plans of Messrs. Clark & Standfield, of Westminster-chambers, Westminster, who have done so much previously to improve floating-docks, and who have recently taken a greater step than ever in this direction. I know Lieutenant Goulaeff, who was partly educated professionally in England, and who has profited by his opportunities. I have had the advantage in Russia of the assistance, in some respects, of Lieutenant Artsayooloff, who also was formerly a student of our Royal School of Naval Architecture, and is one of the rising men of his profession in this country. I

could multiply examples, and perhaps ought to do so, but after saying so much of the Popoffka, which are the most striking examples of the encouragement given to new and great naval ideas in Russia, I do not think it necessary. But if another instance should be needed, I might again advert to the iron floating-dock just mentioned. In England I have vainly protested for some time past against the wholesale construction of long and narrow granite docks, which are quite unfitted for modern times; I have pointed out that our expenditure of millions of money on such docks is not only worse than useless, but is actually operating as a bar to our progress in naval construction; I have shown that iron docks, capable of modification to suit changing conditions, are what we should build. Yet on we go in the old ways, under the guidance of military engineers who, probably, have not a particle of sympathy with, and can have very little knowledge of, our future naval necessities. We have not yet commenced a single iron dock in England for the use of the Royal Navy at home; all that we have done in this direction is to propose this year to build a few iron saucers for small vessels, but even these are to be so designed and constructed as to require the use of a big granite dock three or four times over, with an enormous waste of pumping power every time a gunboat is saucered. Here in Russia, on the contrary, the moment the Grand Duke Constantine ascertained that an iron, and not a granite, dock was best alike for the present and for the future, that moment the energies and the money of the

Government were applied, as they should be, to the production of the iron dock.*

But I have now left Nicolaieff, and find myself finishing this letter in the Black Sea, where one does not always write with the utmost comfort, and I will therefore close it, and wait until I have seen Sebastopol, and perhaps, have made a trip in the *Novgorod*, before I venture to trouble you again.

* There can be no doubt about the truth of three propositions. 1. We have during the last ten or twelve years built a great number of very costly granite docks at Chatham and Portsmouth. 2. The *Inflexible* is too broad to enter any but one or two of these docks. 3. The system of construction adopted in the *Inflexible*, and later in the *Ajax* and *Agamemnon* (to say nothing of circular or oval ironclads), requires for its due development docks

of greater breadth than any we have yet built, notwithstanding the millions expended upon docks. This state of things is one which might and would have been avoided had the military engineers, whom the Admiralty employ to design and build their docks, appreciated the value of iron in dock construction, and provided for—as with iron they might have done—the natural developments of ironclad ship-building.

LETTER II.

Nicolaieff to Sebastopol — Mid-water Fortresses — Colonel Borisoff's Disappearing-Gun — A Night on the Black Sea — Entrance to Sebastopol — The Haven and Harbour — Ruins of Sebastopol — Trade and Commerce of Sebastopol increasing — Reasons why Sebastopol should become a great Trading Port — Steering qualities of Circular Ships — Visit to the Monastery of St. George — English Graveyards in the Crimea — Neglect of British Government to provide a guardian — Their consequent dilapidated condition—Balaklava at the present day.

SEBASTOPOL, 10th October.

HAVING been invited to visit Sebastopol, with the opportunity of taking a passage from Nicolaieff in the steam yacht of the Commander-in-Chief of the Black Sea, making a detour to Odessa on the way, I left Nicolaieff accordingly very early on the morning of Saturday the 9th, and closed my previous letter to you on board the yacht. On our way down the river we stopped at one of the principal fortifications below Nicolaieff to visit the works, and more particularly to inspect a new method of fitting guns on the disappearing principle first introduced by Captain Moncrieff. This new plan is the invention of Lieutenant-Colonel Borisoff, of the Russian Engineers, who is engaged under Colonel Berg in building the large fortress now under construction between Otchakoff and Kinburn, mentioned in my previous letter. And I may, in passing,

observe that, for my part, I cannot at all understand why, since the introduction of ironclads, and especially of the Popoffka, this mid-water fortress is being built at all ; or, being built, why it is being placed where it is, for it seems to me that, if I had to attack it with ships, I would much rather have it placed in its present position than in some others which I might name. If such fortresses were, as I think they should be, built of iron, and floated, with small steam power for moving them about if necessary, an error in the choice of their position would be easily remedied ; but when military engineers deliberately take the trouble and go to the expense of building these constructions “aground”—for a mid-water fortification is in just the same position as an ironclad Popoffka would be if she got aground—their errors in choice of position are irreparable, and the country and the national Exchequer are permanent sufferers from their blunders. But why should maritime nations expend their money at all on naval fortresses that cannot move ? I fancy if in their great war with France and England, and a few other powers, in 1854-56 the Russians could have steamed Fort St. Michael, say, round to Balaklava occasionally, the fate of the war might have been very different ; but all the time nations employ for maritime defence two totally different sets of defenders, naval and military, with separate interests and separate professional traditions, we shall continue to see our maritime fortresses deprived of that most valuable property—the power of locomotion. But to return to Colonel Borisoff’s disappearing-gun arrangement. This consists of an ordinary carriage and slide mounted upon a plat-

form, which platform is made capable of running up and down an incline laterally or sideways, as regards the normal direction of the gun. When at the top of the incline the gun is in a position to be fired; when at the bottom of the incline it is entirely below, and well below, the level of the sill of the embrasure. The gun, slide, and platform are all nearly balanced by a counterweight composed of a series of heavy discs, and the raising of the gun, &c., is effected by adding an additional weight to the counterweight. Colonel Borisoff was himself present, and kindly explained all the details and showed me the apparatus at work, and I must say that he deserves the greatest credit for the striking simplicity of his general arrangements, and for the ingenuity exhibited in the minor parts of the system. One part of the plan is exceedingly praiseworthy—viz., that of connecting with the travelling platform a light chain, so arranged as to draw the shot and powder-charge for each round from the shot-proof magazines to the place of loading along a miniature railway. The machinery of this experimental carriage, &c., was not nearly finished, and, perhaps, it is unfair to judge of it at present; but it seemed to me to be so roughly made as to put the system to some disadvantage; intelligent practical men will, however, easily make the proper allowance for this.

On re-embarking in the yacht *Elborousse* we saw the circular ironclad *Novgorod* steaming down the Boog in a stately manner, but at a very fair speed, and with all the handiness of the smallest gunboat. We gradually left her behind, as our yacht

was a fast one, expecting to meet her again next day at Sebastopol. My stay in Odessa, which was reached soon after noon, was too short, both on this occasion and on my outward journey, to justify any descriptive observations,* but it was long enough to enable me to share the princely hospitality of Mr. Marasly, the Deputy Mayor, and the kindness of Admiral Chikachoff, the head of the great Russian Steam Navigation Company, which has done so much towards elevating Odessa to its present eminence among maritime cities. At 7 P.M. we left for Sebastopol, and a glorious night upon the Black Sea was spent. The deep, dark ocean, the steel-bright sky, the moon's intense splendour, and the burning and unclouded stars composed a solemn picture—nay, not a picture, but a scene too magnificent and too profound for even memory to paint. During the evening I heard a sound of chanted music, and, finding it proceeded from the crew at evening prayers, I went on

* "Should the traveller have reached Odessa from the interior of Russia, he will be struck with the bright and European aspect of the great mercantile city, which, being built principally of stone, is totally unlike any other Russian town. Favoured, however, as Odessa is by its position on the sea, it is bordered on the left side by a dreary steppe of so intractable a soil that trees and shrubs, with the exception of the acacia, rarely attain any size, and in many places will not even live. A narrow slip along the sea-shore is about the only oasis of vegetation in the neighbourhood of the city. The climate is very unequal, and, the town

being built on a limestone cliff of a very crumbling nature, the dust during summer is almost insupportable. There has also been another and a greater evil—the want of fresh water; the greater part, indeed nearly all, of this necessary of life having formerly been brought from a considerable distance through an aqueduct; but English capital and enterprise, represented by the Odessa Waterworks Company, Limited, have remedied this great defect, and supplied Odessa abundantly with pure water from the Dneister, thirty miles distant. Fuel, however, is still very scarce and dear."—New Edition of Murray's *Handbook for Russia*.

deck, and found there the men assembled forward, and chanting with much energy and spirit, and with voices which blended with wonderful truth and sweetness. I was quite astonished at such chanting by such a choir, and the impressiveness was deepened by the earnest manner of the men, and by the bright but mystic light in which they stood—that mixed light of moon and stars, descending through tranquil heavens, which is, perhaps more purifying to man than even the “dim religious light” of the temples which he himself builds. At 1 o’clock in the morning we passed the *Novgorod*, moving silently through the night’s silence towards that city of doom and death—Sebastopol. It was with a pardonable interest in his powerful creation that Admiral Popoff, who was on board the yacht, steamed once round her before passing her and leaving her behind. It was in the light of a glorious morning that I found myself approaching, for the first time, this city of sorrow and sadness, in which I now write. Neither Eupatoria nor the Alma mouth was, of course, within view, but away on the left it was easy to see where the Katcha and the Belbek reached the sea; on the right was the Khersonese lighthouse; nearer, Kamiesch and other bays; and before us the ruins of the great Forts Constantine and Alexander on either side of the entrance to Sebastopol, of which the former, at a distance, looks almost as formidable as if the allied fleets had never expended their fury upon it. As you approach nearer you see however, the fearful wounds and scars they inflicted. Of the little Wasp battery, which did so much mischief to our ships, I could see no trace left. The great haven of Sebastopol, with its inner bays and harbours,

is a magnificent sheet of water, very much like our own Milford Haven, but not so large. Hitherto both these great havens, which by situation and by natural conditions seem to have been adapted by Providence for great commercial purposes, have been mainly devoted to warlike objects, and made to bristle with war-ships and fortresses. But what my friends and I are doing for Milford Haven is, I am delighted to learn, just now being done for Sebastopol, and of both here and there it may be said that where war pursuits have abounded, peaceful pursuits shall much more abound. I will revert to this aspect of Sebastopol presently.

On entering first the haven and then the harbour (the Southern) of Sebastopol, the great ruin which befel this fair city—for fair, and more than fair, it was, by the beauty of its site, the glory of its climate, and the magnificence of its edifices—is not nearly so obvious as it afterwards becomes when the streets are penetrated and the hills ascended. The noble Catherine stairs at which you land, with the columned portico up to which they lead, are almost exactly as they were before the bombardment. Two handsome statues and a couple of stone lions surprise you by their uninjured appearance. But, even before you pass underneath the portico, you are confronted by the toppling ruins of a splendid club-house which was utterly destroyed, and wherever you go afterwards throughout the town, whether in the lower streets or on the higher levels, you move among ruin and desolation. Pompeii, so far as it has yet been disclosed, is not, if I remember rightly, to be compared with Sebastopol for magnitude and extent of

visible destruction. The view from any of the higher hills on which the city stands is simply appalling, and far surpasses what I had expected to see in this respect. Of course the scene is somewhat relieved by restored and by new buildings, and this improvement is now rapidly extending by the construction of new churches, new hotels, and new dwelling-houses. I am told that Mr. Kasi, the present mayor (who is not only a man of considerable property, but, what is much more important, a man of surpassing ability, sense, and energy), has declared his intention to proceed rapidly with the restoration of some of the principal streets; but it is terrible to think of the extent of the ruins which have to be got rid of. On the highest ground of the city south of the harbour a magnificent church, of a style unknown in England, but of exquisite proportions and of a beauty which grows rapidly upon you, has been erected by voluntary contributions over the graves of several distinguished admirals who were killed during the war. It is nearly finished, and is named after St. Wladimir; as is also another fine church, building from funds similarly supplied, which is being constructed at a short distance from Sebastopol, on the sea-shore, over the spot on which Wladimir is said to have embraced Christianity in the tenth century. After a short drive through the town I accompanied Admiral Popoff to the Malakoff Hill, and there had the advantage of hearing him—who performed so active a part during the war, both by sea and in the field—describe the great outlines of the famous battle-fields, filling much of them in with details which to this hour are of thrilling interest. We afterwards visited the site

of the fourth bastion, on the more southern part of the field, thus completing the general view of the Russian positions, and of the principal points from which the allied troops attacked. The day was singularly fine and clear, and it was easy to see not only such conspicuous objects as Lord Raglan's headquarters, the Hill of Inkermann, the principal French and English batteries, and the French cemetery, but also such details as the English trenches in front of the Redan, observing that the ravages of time and tourists are rapidly obliterating these lesser features of the fields over which the gods of war fought and thundered. But Mr. Murray's *Handbook for Russia* is so excellent in its descriptions of this as of other places that I will not attempt any account of Sebastopol or of its environs. Such a visit as mine, however, impresses one strongly with the waste as well as the havoc of war. In the cemetery over yonder, made conspicuous by a pyramid church surmounted with a cross, and in another near, lie, as I am informed, more than one hundred thousand Russian men killed during the siege. Many balls and many bullets must, therefore, have taken effect. But those that did were, nevertheless, but few indeed compared with those that the allies projected against this devoted place. There are scores upon scores of large buildings with their surfaces pitted all over with scars caused by shot and shell that produced nothing but scars upon buildings. A faint idea may be formed, perhaps, of the extent to which the place was fired upon when I say, that from a tax of 6*d.* per cwt. which the Government levied upon the proceeds of the sales of old iron, shot and shell

picked up and sold by the people, a sum of nearly 15,000*l.* was realised.

I am glad to turn from this unhappy past of Sebastopol to the present and the future. It would have been a good and pleasant thing if the earthquake which happened here this year had shaken down all the ruined walls, which it would be well to get rid of; but, unfortunately, it took effect upon the useful buildings, and did some harm to most of them.* Still as I have already indicated, there is reason to hope that trade and commerce will so spring up and spread here as to abolish the ruins and supersede them by houses and warehouses and other places of business. The primary source of this prospective prosperity lies, of course, in the great railway which has now been completed, and which joins this place to Moscow and Petersburg. The terminus of this railway is at the upper or inner end of the harbour, but it was recently extended along its western bank by order of the Government, as a sort of *tour de force* to test the ability of that corps of the army whose business it is to construct railway works for war purposes. Incredible as it may seem, I am informed on the highest authority in the place that, although 10,000 cubic yards of earth had to be cut away and removed, the whole of this piece of railway, one mile long, was formed, and nine running miles of rails laid down, in twenty-four hours! An immense

* One curious effect of the earthquake was observable in the Great Cemetery on the north side when I afterwards visited it. Many of the monuments had been turned partly

round upon their pedestals. I remember reading that the statue of Lord Dundonald at Valparaiso was turned nearly half round by an earthquake not long after its erection.

number of men was of course employed, the sleepers and rails were on the ground when they commenced, and the work was carried on continuously for the twenty-four hours, but the time occupied, nevertheless, was exceedingly short. However, the railway now exists, and between it and the harbour bank a long line of warehouses is about to be built. A few necessary piers in front of them are already well advanced. The harbour itself is a splendid one naturally, and needs very little indeed to be expended upon it to make it perfectly available for loading and unloading large commercial steamers along a great length of quay. Until the present year, however, Sebastopol was a military port only, and unless Government had made it and finally decreed it to be by the Imperial will a commercial port it could not have had a great commercial future opened to it. This, however, the Emperor has done during the present year, and this step once taken, the Government have lent money for the construction of the piers and warehouses and for the establishment of a Government bank, Government schools, &c. Two private commercial banks of Russia have also already opened branches in Sebastopol this year. Waterworks, gasworks, and other such requisites are being arranged for by the gentleman whom I have previously mentioned, Mr. Kasi, to whom all the principal people—indeed, all the people—seem to look up as the leading mind and leading will of all these great progressive measures. From what I have seen of this gentleman I am not surprised at their confidence. And now the question arises—What reasons are there for thinking that when the

necessary appliances are ready trade will come to Sebastopol? One very good reason seems to be that trade has already begun to come and is increasing. I have myself seen two vessels in the harbour to-day bringing grain from Taganrog to tranship it here.

But, more generally, and taking imports first, it is obvious that Sebastopol must offer great advantages to trade and traffic between the Bosphorus (and all countries beyond the Bosphorus) and the interior of Russia, and between the Caucasus and it. Moscow may be looked upon as the great centre to which imports into Russia are sent, and from some cause or other there seem to be alienating influences at work at Odessa, for I know of one cargo of tea from Hankow, avoiding Odessa, going all the way round to the Baltic, and getting by Revel to Moscow or Nijni Novgorod. But in this matter of imports, even if all other things be equal as between Odessa and Sebastopol, the latter place is sixty miles nearer to the Bosphorus by sea and ninety miles nearer to Moscow by rail, and both cargoes and passengers must in such a case choose the shorter route. Of course the cotton trade from the Caucasus, and the Persian trade from beyond, must come to Sebastopol, for otherwise it would have to pass this place on its way to Odessa, adding the whole distance between the two ports to its sea voyage, and adding the ninety miles to its railway transit besides. So much for import trade, in which there will necessarily be competition with Odessa. But this is not the case, or not so in any such degree, as regards the export trade. The southern part of Russia may be taken to be

divided into two parts by the Dnieper, an eastern and a western part. Of the western part the ports are Odessa and Nicolaieff; of the other the ports have hitherto been the Azof ports—namely, Taganrog, Mariopol, and Berdiansk. The great question with reference to Sebastopol is, does it offer great and decisive advantages for transporting the grain and other produce of this eastern half of Southern Russia as compared with the Azof ports? For it is to these ports, and not to Odessa, that the bulk of this produce goes. Now, neither of the Azof ports is a deep-water port. Ships of the size usually employed for the ocean transit of such produce have to load from three to four miles off Berdiansk, four to five miles off Mariopol, and ten to fifteen miles off Taganrog. The result of this is that there are great expenses incidental to these circumstances, which have to be borne at those ports; then, again, owing to the bar at the Straits of Kertch or Yenikale, a certain amount of unshipping and reshipping cargo has to go on there, involving further expenses; and owing to the risks of Azof navigation to such vessels, freights and insurances are substantially increased. I have inquired closely into this matter and find the aggregate of these extra charges is estimated to be at least 1 rouble 40 copecks per quarter of grain. As a set off to this must be added the extra cost of carriage to Sebastopol over one hundred and sixty miles of railway (taking Kharkoff as the centre of the trade), which amounts to about 60 copecks* per quarter; deducting

* The par value of the rouble is slightly more than 3s. 2d. The coinage is decimal, and 100 copecks equal a rouble.

this from 1 rouble 40 copecks, we have left a saving of 80 copecks per quarter, as the result of shipping at Sebastopol instead of on the Azof. But the advantage does not stop here, for the Azof ports freeze for several months in the year, and after their close in November, the price of grain at those ports falls 15 and sometimes 20 per cent., to the loss of the producer, because the merchant will not buy grain to store it till the navigation opens again without some such large reduction of price. On the other hand, Sebastopol never freezes, and the grain and other produce may be exported all the year round, being shipped under most favourable conditions in a deep-water port—that is, on the open sea—and not subject to the risk of freezing. It will obviously, therefore, be to the great advantage, at least of the grower and of the shipowner to ship cargo at Sebastopol. These seem to me to be very substantial and conclusive reasons for believing in the rising prosperity of Sebastopol, and they are fully concurred in by Captain Harford, our excellent resident Consul there.

After descending from the Malakoff Hill, and witnessing the ruins of those splendid granite docks which the English destroyed after getting possession of the town, we saw the *Novgorod* entering the haven, and, proceeding on board of her, steamed down the principal haven, making certain further examinations of the vessel and armament fittings, and, above all, testing the turning powers of the ship under the action of the helm, and of the screws reversed. The circular form is so extremely favourable to this kind of handiness that

the *Novgorod* can easily be revolved on her centre at a speed which quickly makes one giddy. She can, nevertheless, be promptly brought to rest, and, if needful, have her rotary motion reversed.

Since writing the above I have driven over to the Monastery of St. George—which occupies a superb position at an elevation of several hundred feet above the sea,* at a few miles

* In Murray's *Handbook* we read as follows:—

“The traveller will now reach the sea-coast and Cape Partheniké (Violenté, or St. George) so called after the monastery of the same name which is upon it, and which was the headquarters of the French army during the siege of Sevastapol. The spot is interesting for several other reasons, and we will allow Mr. H. D. Seymour to describe it in his own words:—

‘The cape derived its ancient name from the Cruel Virgin divinity of the Tauri, so famous in early history, to whom all strangers were sacrificed who suffered shipwreck on this inhospitable coast. When the Greeks arrived from Heraclea, they brought in the worship of Hercules and Diana, and, as they always respected the religion of the countries they visited, and found a great resemblance between their own Diana and the Virgin of the Tauri, they probably merged the two into one under the name of the Tauric Diana, discontinuing the ancient barbarous custom of offering human victims. At a later period, Iphigenia was confounded with the two other divinities, as Herodotus expressly says that in his time

she was worshipped as a goddess. The Tauric goddess had her Parthenon in Kherson, and her chapel on Cape Partheniké. The road is still visible by which the worshippers passed from Kherson to the promontory, crossing a ridge of rocks, on which the traces of the ancient chariot-wheels are distinctly visible. Ensconced on a ledge of the precipice, is the famous monastery of St. George. From the plateau above, which has all the aridity and monotony of the steppes, its ancient walls are not visible, and it is not till the traveller approaches the edge of the cliffs, and looks over, that he sees, instead of a frightful wave-beaten precipice, a most charming little village nestled in the rocks at about 50 feet below him. There are a church, and houses, and terraces, cut one below the other, and ancient poplars and gardens irrigated by a fine rivulet of water. The spot looks like a little oasis suspended, as if by enchantment, at several hundred feet above the sea, in the midst of an amphitheatre of black basaltic rocks, which rise majestically around, and form a striking contrast to the rich verdure in which the monastery is hidden. A door and staircase cut in

distance from Balaklava—and afterwards across the dreary steppe down past Karani, through Kadikoi, and into Balaklava. The sun was getting low when we left the monastery, and had set before we entered the last-named village, but the memorable ground on which the battle of Balaklava was fought, including that along which “the Six Hundred” charged, was beautifully lighted as we approached and passed it. On my way down I could not resist, late in the day as it was, the desire to enter one of the many English graveyards which are passed in this part of the ground covered by the allied operations, and I accordingly made my way across a field and passed into one through a breach in the low, white wall which surrounds it. The simple monument which recorded that the place was sacred to the memory of those who had served in the Land Transport Service was falling to pieces, the inscription was in part gone, and the Tartars doubtless turn their cattle into the inclosure to graze upon the graves of our fellow-countrymen. This need not be wondered at, because this is one of many scores of British Crimean graveyards the further care of which has been abandoned by the Government. Those which lie within the Russian villages, and there are more than one in Balaklava itself, are protected by the Russian villagers; but those which lie out upon the open plateau and slopes, excepting a very few, and which only the British nation and Government could protect, have lost all further protection. I

the rock form the only entrance to this great hermitage which was no doubt first created by the ancient Troglodytes,

or dwellers underground, whose remains are so numerous in the Crimea.’ ”

do not think it would be fair to complain of this without much previous consideration, because it obviously is a serious business to guard more than one hundred and twenty small cemeteries, many of them scattered over an open and barren steppe several square miles in extent. But what I think it is fair to complain of is, that when the Government has resolved to abandon all but a few of these, and those few have been reserved for preservation on account of the eminence of the dead who lie in them, and of the pains that survivors have taken to keep the remains of their deceased friends sacred, they should, nevertheless, withhold a trifling outlay which is essential to the object, and, after all, run the risk of having these few reserved tombs desecrated. The Government have already spent many thousands of pounds in constructing and repairing these cemeteries, and are at the present moment spending 5,000*l.* more upon them ; and yet I am informed that no guardian is to be appointed to protect them. The French nation spends 160*l.* a year upon the guardianship of their fine Crimean cemetery, and surely 25*l.* or 30*l.* a year could be afforded by Great Britain for the payment of a pensioned Russian soldier, or some other trusty man, to guard the dozen graveyards upon which we are even now spending a considerable sum for repairs. The Government profess to think that such a man is unnecessary ; but no one on the spot that I can find shares that opinion. The poor Russian, it is true, will not disturb them, for the presence of a cross is sufficient to keep him in awe. The poor Greek, no doubt, will, keep as far from a graveyard, especially by night, as he conveniently can.

But the poor Tartar is a very different sort of fellow, and has given repeated evidence of his quality, not only by stealing what is valuable from the monuments and breaking down the tombs, but also by digging up the bodies of our English officers in these Crimean cemeteries, and stealing from them anything which he may fancy or consider of value. One officer of eminence, at least, has in this way more than once had his bones brought to the surface from beneath a costly memorial, and could only be spared this further desecration when his memorial had been buried with him. This is surely a case in which it would scarcely be decent to make experiments, when success would only result in the saving of a paltry stipend, and failure would involve the renewed desecration of the remains of those who bled and died for us.*

The village of Balaklava presents now but few reminders of the busy life once abounding there. A few perishing piles on the edge of the harbour here and there are nearly all the evidences I could detect of the former presence of the Allied Armies and Navies in this little port. Probably the cottages afforded many more indications, but, seeing the place for the first time, I could not detect them. To my eye but little was visible beyond a poor fishing and agricultural village, except the small and dark, but picturesque harbour, surrounded with still darker hills, save where, on the left, the old Genoese

* I am glad to be able to state, on the authority of a letter which I have received from Sebastopol, that very soon after the publication in *The Times* of these remarks, the War Office telegraphed authority for the erection of a small house for a guardian of these cemeteries, and they will therefore now be placed, no doubt, under proper care.

towers stood up and took the last light of the western sky. I learn that a French company is engaged outside the harbour in recovering property from the *Prince* and other transports that were sunk there in the great storm. They have recovered many things, and, among others, some bottled stout in excellent condition. The drive back in an open carriage, and in the evening air, gave one some indication, however imperfect, of the cold which must have been endured on the plateau between Balaklava and Sebastopol in the allied encampments. It was wonderfully keen and penetrating for this time of year, when the sun still has by day a summer power. I must say nothing of the beauty of certain moonlit scenes, or of the splendours of sunrise and sunset at this place, lest I should be tempted beyond bounds.

LETTER III.

The Ancient City of Khersonesus — Its Ruins and Remains — The Church of St. Wladimir — The Romantic Story of Glycia — The Superior of the Monastery — Tradition respecting the Origin of Adam — Voyage to Theodosia — The Ancient Kaffa — The Russian Painter Aivazofsky — His Style and his Renown — Visit to his Studio — Reception by the Mayor — A Stormy Night — Rough Passage from Theodosia to Yalta in the *Novgorod* — Her Behaviour at Sea.

BLACK SEA, Oct. 13th.

IN the hope that a few further vacation notes on what one is seeing in this part of the world may not at this season be unacceptable, I now proceed to avail myself of the extreme steadiness at sea of the circular ironclad *Novgorod*, by recording such observations as our present passage from Sebastopol to Theodosia suggests. But I must first mention a brief visit made to the ancient city of Khersonesus yesterday before embarking on this most notable vessel, the first of those Popoffka of which, I venture to predict, the world will see many before the use of armour at sea is abandoned. Rear-Admiral Popondópolo, the Superintendent of the port of Sebastopol, was so courteous as to propose that he should take me to Khersonesus on his steam-launch, starting in advance of the *Novgorod*, so that we might have time to see the principal points of interest

there before the hour appointed for the ironclad passing the place. I need not say how gladly I availed myself of so favourable an opportunity for visiting what may, with sufficient reason, be designated the most memorable spot in Russia ; for here it was that, in the tenth century, Wladimir, and, in his person, the great Empire of Russia, were baptized into the Christian faith. When we consider that Christianity has only existed for a period of which less than thirty lives of the allotted length of man's would embrace, and remember that it has already covered nearly the whole of Europe, the greater part of the American continent, the principal lands of the Southern seas, and much even of Asia and Africa, we must not complain of its rate of progress ; but, at the same time, if we compare the number of Christian populations so called with the aggregate peoples of other faiths, we shall feel how great are the difficulties still to be overcome, and shall see cause to look back with grateful interest to that event which, eight centuries ago, added Russia to the number of the Christian nations, and caused the plains of this vast empire to sparkle now with golden spires and domes, as emblems of that Christian faith which is the purest and simplest faith of the world. I say the purest and simplest faith, because I believe that the intellect of man will, in every Christian nation and in every Christian church, pierce through the veils of ritual and ceremony, however elaborate and however gorgeous, to the life and teachings of the Author of the "Sermon on the Mount," that one true creed of Christianity. Landing on the southern shore of what is now known as Quarantine Bay, we were one hundred yards or

so from the spot on which, as seems to be well authenticated, Wladimir was formerly made a Christian by baptism. It is no part of my plan in these letters, as I have before intimated, either to copy or re-write any portion of Mr. Murray's Handbook, which, thanks to its clever author, Mr. Michell, now of Odessa, furnishes a charming epitome of Russian history. But those who turn to this work will find how intensely this spot of earth glows with historic interest, beginning long before the time of Christ, and coming down by a succession of luminous epochs to the present hour, when the Russian nation is erecting yet another church to mark and celebrate its sacredness. To this new church, now under construction, we first went, and great was the satisfaction I felt on finding that it was a part of the plan of this new edifice to enclose and preserve the substantial remnants of the cathedral which Wladimir is said to have himself built to mark the site of his baptism. Numerous and fine relics of this ancient cathedral, and of other much more ancient buildings, have been dug up in detached fragments, and are now ranged along the path which leads up to the neighbouring monastery. To this monastery we next went, and there my friend, Admiral Popondópolo, so introduced me to the Superior of the establishment as to elicit from him the utmost possible kindness. This remarkable man interested me, I must confess, more even than the marbles and crosses and inscriptions and coins of the greatest antiquity here treasured, for in him the past lived no less truly than the present—lived in his form, his eyes, his thoughts, his words, his dress, and yet lived concurrently with the vivacity, the

intelligence, and the genial courtesy of the Russian gentleman of the present day. Attired in a long velvet gown, with a cylinder of velvet on his head, a common string of beads and a curious stick of natural growth in his hands, this gentleman, charged with the superintendence of the church, now making rapid progress, received me with almost affectionate warmth and interest, and at once proceeded to show me over the monastery and its vicinity with a rapidity suited to the intended brevity of the visit. He had been ill, and was still obviously out of health, but nothing I could say or do could divert him from his purpose of showing me whatever could be seen under the circumstances. We first looked over the new pictures already prepared for the walls of St. Wladimir, and very good pictures most of them were; next inspected the museum of antiquities gathered together on the spot, and then ascended the artificial hill which stood in the centre of Old Kherson, and stands still, and which marks either the spot on which the inhabitants who defended the place against Wladimir piled up the earth, which his troops threw into the trenches by day and which they took out by night, or else the ruins of the house of the patriotic Glycia of the fourth century*—which I

* The romantic story of Glycia, as told in Murray's *Handbook* and attested apparently by the mound which the Superior and I ascended, is as follows (pp. 286-7):—

“To the left, on descending into the town, and close to this church, was the market-place, easily recognized by the heap of earth in the shape of a great tumulus, and with which an

interesting story of ancient days is connected.

“In the year 334 or 336 A.D., Assander, the last king of the Bosphorus, asked in marriage for one of his sons the daughter of Lamachus, the Stephanóphorus, or chief magistrate of Khersonesus, the most powerful man in the town, famous for his riches in gold, silver, slaves, serving-women, horses, and lands. He

could not, in my haste get determined with certainty. In ascending this hill, or mound, my amiable conductor exerted

also possessed a house with four courts, occupying all one quarter of the town, lying near the exterior part of the Bay of Soses (now Streletska Bay) where he had a private door pierced in the walls of the town, which is the only one that now remains entire. Four magnificent gateways, guarded the approaches to his house, and each herd of oxen and cows, horses and mares, sheep and asses, returning from pasture, had its own particular entrance and stables.

“Glycia, the daughter of Lamachus, married the eldest son of Assander, under the express condition that he should never return to Panticapœum, to visit his father, not even at the hour of his death. After two years Lamachus died, and Glycia, the following year, wished, according to the general custom, on the anniversary of her father’s death, to give a grand feast to all the people of Khersonesus, her riches being sufficient to provide them all with wine, bread, oil, meat, poultry, and fish; and she promised to renew this festival each year. Her husband, deeply vexed at such prodigality, pretended to praise her filial affection, but secretly determined to revenge himself by seizing this occasion to hatch a plot against the town, the citizens of which had inflicted many injuries on his ancestors, the kings of Bosphorus. He wrote to his father to send him, from time to time, a dozen young Bosphorians, strong and active, who were secretly introduced into the vast palace

of Lamachus, by the little door near the Bay of Soses, and waited in concealment for the next anniversary, in order to seize the town, and massacre the people, overcome by wine and good cheer.

“A lucky accident caused the treason to be discovered. On the eve of the feast, one of the servants of Glycia, having disobeyed her mistress, was shut up in a distant chamber, which happened to be just above that in which the Bosphorians were concealed. The loss of her spindle, which rolled into a hole near the wall, induced the girl to lift up a square of the floor in search for it. She then saw the Bosphorians assembled, and hastened to inform her mistress. Glycia then sent for three delegates from the town, and having made them swear that, in recompense for her patriotism, they would, contrary to established custom, bury her inside the town, she communicated to them the astounding news, and gave them directions how to act. She made them celebrate the festival gaily, as if nothing was to happen, and only bid each man prepare some faggots and torches. Then, having drugged her husband’s wine, and escaped from the house with her maids carrying her trinkets and gold, she ordered the faggots to be piled round the house and fired, and thus make all the traitors perish in the flames. The citizens of Khersonesus wished to rebuild the house of Glycia at the public expense, but this she strongly opposed, and, on

himself so severely that he was obliged to wait on the summit for the power to speak, and then, with that strange combination of the priest of the past with the gentleman of the present speaking in every word and tone, he explained with rapidity and enthusiasm the historic interest of the place beneath us. He was but nine months from Kief, and yet had already set many marks upon his new domain, and these latest changes, where so much change had been before, he likewise described. Here was a new garden, there a terrace; here a summer-house, and there a bathing-place; and then, further on a floor or a wall of extreme antiquity, and here—startling fact—hard by the Wladimir church, beneath a rude cross, *la source du monde*, *la source d'Adam* for such was the announcement, and in these very words, of my friend; his bright intense eyes twinkled as the words were spoken, but whether with faith or with something else it is not for me to say, nor even to conjecture. The spectroscope that shall resolve the light of the eye into its component parts and exhibit its elements is not yet invented. I cannot, it is true, quite reconcile this account of Adam's origin with other histories,* but it is a safe rule of conduct to interpret

the contrary, caused them to heap up every kind of filth and refuse on the place stained by treachery, which was ever after called 'the Den of Lamas.'

"This monument, more indestructible than brass or marble, is still there, and, without knowing the story of Glycia, the stranger is astonished to find the rubbish of all the town piled on the top of the plain which borders Stre-

letska Bay, in one of the finest situations of the Khersonesus."

* Mark Twain's amusing remarks on the spot in Jerusalem for which the same dignity is claimed will recur to some readers:—"If even greater proofs than those I have mentioned are wanted to satisfy the headstrong and the foolish that this is the genuine centre of the earth, they are here. The greatest of them lies in the fact that

what is obscure in the words or the conduct of a friend by what is obvious and certain; and applying this rule here, I am sure this friendly and courteous gentleman intended to give me satisfaction and pleasure in this as in all else that he said. But the *Novgorod* was already at hand, and we had a passage of one hundred and twenty miles to make in her, and therefore I was obliged to tear myself away from my amiable guide, whom I hope I may meet again, and whom I certainly shall remember with interest—

“ But not for all his faith can see
Would I the cowled Churchman be.”

October 14th.

On re-consideration it seemed good to defer my remarks upon the *Novgorod* until the trip in her was completed, and as we are now retracing our course along the south coast of the Crimea (but well out to sea), as far as Yalta, in a much heavier swell and sea than we had on our previous passage, I must still allow a few more hours to elapse before I speak of her performances.

In the interval it may not be uninteresting to make mention of the day spent in Theodosia, known in olden days as Kaffa. The town which originally stood here dated from several centuries

from under this very column was taken the *dust from which Adam was made*. This can surely be regarded in the light of a settler. It is not likely that the original first man would have been made from an inferior quality of earth when it was entirely convenient to get first quality from the world's centre.


This will strike any reflecting mind forcibly. That Adam was formed of dirt procured in this very spot is amply proven by the fact that in six thousand years no man has ever been able to prove that the dirt was *not* procured here whereof he was made.”

before Christ, but it was the Genoese who, in the thirteenth century, founded Kaffa and raised it to eminence.* The town now presents most interesting and picturesque ruins of the fortifications which they erected, together with an Armenian church of striking appearance. It likewise embraces a large village, or *quartier*, of pure Krim Tartars, who gave their name to the Crimea. The place has a very strong interest for me as the birthplace and the residence of the great Russian marine painter, Aivazofsky—an artist who, by the force of original genius, has, in the face of much opposition from the Schools (and especially from the pedants) of Art, attained universal fame. I cannot presume to speak with any authority on this subject, but in my opinion his works excel in two important particulars in which the greater number of British painters are undoubtedly deficient. I refer to the representation of moist atmospheres and of sky colours. As I write, at early noon, I

* “It has been authentically ascertained that the present town of Theodosia was originally founded by Milesian-Greeks, who either came direct from Miletus, or from the neighbouring colony of Panticapœum, five hundred years before Christ. The fertility of the surrounding country, which was one time the principal granary of ancient Greece, probably caused the town to be called Theodosia or God’s gift. By the Tauro-Scythians it was for sometime called Ardaydà, or the ‘City of the Seven Gods.’ At the beginning of the third century before Christ, it was incorporated with the kingdom of Bosphorus (Kertch), and

together with the latter, was later annexed to the Roman Empire. Its construction was effected in the middle of the second century after Christ, at the beginning of the ‘great migration of peoples.’ For a period of ten centuries after, the plough passed over the site of Theodosia, and it is barely mentioned by contemporaneous historians. At last in the thirteenth century, the Genoese purchased from Khan Oran Timur the deserted territory of Theodosia, and built on it a town which they called Kaffa. The date of its foundation is between 1263 & 1267.”—(*Vide Murray’s Handbook*, pp. 309, 10.)

see through the open door of my cabin Mount Meganom and the ranges of rugged hills reaching away on either side. Immersing all these hills is a thin grey vapour, softening all outlines, tempering all their lights and shades, and at the same time suffusing them all, and with them the neighbouring sea surfaces, with tender and tremulous beauty. I know of no one who renders these effects, and others more or less analogous, with so much sympathy and success as Aivazofsky. I am quite aware that in some of his larger works he dashes sea and sky together and mixes their mists with infinite boldness, sometimes throwing in a wreck or a spar or a boat with human figures clinging to it, probably to give the work interest to those whose regards would otherwise wander idly over even the grander aspects of nature; and I am not surprised that those whose function it is to criticise rather than to enjoy take exception to some of these works, and find canons of art which the painter has not respected. But great masters will have their own way, and Aivazofsky is far too great a master to deny himself his. In the matter of colour he is, perhaps, at times even more defiant of the schools than in the matter of storm-mists, and, as I think, with even greater reason. I cannot help thinking that in England our artists as a body are behind the nation in foreign travel, and in those lessons which are taught by foreign climes and skies. The conventional colours of English landscape art, however true they may be to English scenery, exclude too many of the wondrous pictures painted by the sun on sea and on cloud in this part of Europe, and perhaps more especially still in Egypt. It is to the credit of Mr. M'Cullum



and some other artists that they not only have visited these foreign lands, but have lived and studied in them, and have produced pictures so truly painted that their great merits cannot be gainsayed, although so highly and so intensely coloured as to startle nine-tenths of our R.A.'s out of their sober senses: Aivazofsky has long been doing the same in Russia, and has won such renown that, although a rapid painter, he cannot nearly supply the existing demand for his works. Theodosia, as we soon found, presents many marks of the presence of this great artist and large-minded man. He has built there a handsome Greek building, and gathered within it a most interesting and valuable collection of the antiquities of the place and neighbourhood, ornamenting it with some splendid works illustrative of the place from his own brush. He has also built a memorial chapel to record the services of a deceased Russian officer, General Kotlareosky, who greatly distinguished himself, and was wounded twenty times over in the wars of the Caucasus. He has painted this officer's portrait, and illustrated his services by several sketches and by other effective artistic devices. I need hardly say that it was with great interest that we saw this eminent artist visit us even before our anchor was down, and accompanied him on shore, there to have the great advantage of his presence in going over the town, to visit his studio and inspect his latest works, and to share his princely hospitality. There was a yet further and more permanent gratification in store for us, however; for, before leaving Theodosia, Admiral Popoff and myself each received from Mr. Aivazofsky's hands a small picture of the *Novgorod* steaming, as we are now

steaming, along the splendid Crimean coast, but in smooth water, whereas it is through heavy swell rolling in from the south-west that we are making our way. Among the latest works of Mr. Aivazofsky are several which I was much interested in seeing, because they exhibited his power when voluntarily approximating to the more usual methods of the marine artist and of the landscape painter, and showed that in this as in other matters, when a truly great and original man chooses to become a conformist, he can, even in conformity, exhibit his originality and greatness. In the studio at Theodosia were a few sea-pieces and one or two landscapes, the great and tranquil beauty of which would arrest the eye whenever seen, and of which any artist of any country might well be proud. As *The Times*, notwithstanding its great range and penetrating power, may not reach the remote Crimean town of which I am speaking, where the English residents must be extremely few, even if there be any, and which is forty miles from a railway, I may without indelicacy add that in this case the man seems as great as the artist—broad-browed, deep-eyed, large-hearted, and with a certain nobleness of air and manner that it was pleasant to meet in this old and out-of-the way town.

The arrival of a Russian ironclad man-of-war, with a Member of the British Parliament on board, seemed to some one to be an incident of sufficient importance in Theodosia to justify him in advising the authorities of it, and the authorities in receiving us with public ceremony. The Mayor, who spoke in excellent English, addressed a few generous words to me, in the course of which he conferred upon me (unconsciously, of course, and

as foreigners will do when the opportunity offers) that knightly title which aldermen—only aldermen—sigh for; and then, speaking in Russian, said probably much kinder things still to the distinguished Admiral whom I accompanied. A band of music played the national airs, the inhabitants displayed in more than one place the national colours; and when we embarked at night the authorities added the light of bonfires and fireworks to the streaming splendours of a full Southern moon. Perhaps these maritime people, living amid ruined fortresses which yielded to Turkish guns four centuries ago, may be excused for receiving with marked consideration two designers of those floating armour-plated steam fortresses, which in these days excite so much interest. I, at least, appreciated their magnanimity as I appreciate that of many other Russians in these parts when they extend friendship and hospitality to a fellow-countryman of those who bombarded their towns, and reduced their finest Southern sea city to ruins.

On embarking, at 8 P.M., with the intention of retracing our passage as far as Yalta, we found the barometer falling, wild clouds gathering, the wind rapidly increasing, and a heavy sea running: and as our passage would occupy but a few hours, and I was very desirous of seeing the *Novgorod* in a seaway by daylight, our departure was deferred till the early morning, anchor being weighed by 6 o'clock. The wind had much moderated, but the south-west gale of the night, blowing across the whole width of the Black Sea from the Bosphorus, had caused a heavy swell, combined with which were shorter and confused seas, so that the circumstances were extremely favour-

able for developing the sort of behaviour which a circular ship would exhibit in a seaway. As huge mountainous promontories project far into the sea between us and Yalta, we have had to change course considerably, so that in the course of the morning we have had the sea in succession on the starboard bow, right ahead, on the port bow, and nearly abeam. Let it be observed further that we are in a very small ship for an ironclad. The displacement or total weight of our largest ironclads exceeds 10,000 tons: the *Sultan* weighs nearly 9,000 tons; the *Devastation* the same; the *Iron Duke* nearly 6,000; the *Glatton*, coast defence vessel, nearly 5,000; the four small vessels built by Mr. Gladstone's Government when the late war between France and Germany broke out, about 3,500; and this Russian circular vessel, *Novgorod*, only 2,500 tons. Another way of estimating her size is to consider, that being 100 feet only in diameter, her total length round is but 314 feet, and this length of size and of armour is obviously only sufficient to make the two sides of a ship of about 140 feet in length, and of usual breadth—say 30 feet broad. These dimensions are not only very much less than those of the smallest ironclad above-named, but less even than those of the tiny gunboats *Viper* and *Vixen*, which were built, in 1865, for a special purpose, and which no skill at my disposal could make suitable for general sea service. Yet this circular vessel carries armour and guns which together exceed in weight the total weight of the English gunboats—hull, armour, guns, engines, masts, stores, and everything else composing them. She has, moreover, a freeboard of armoured hull of only 18 inches, above which stand along the middle of

the vessel from bow to stern strong deck-houses about 7 feet high ; and above these rise, in the centre of the vessel, the fixed armoured breastwork, within which stand the two large guns (28 tons each), and over which they fire. Near the stern is an elevated and commodious platform, on which we have been able to remain quite dry throughout this morning, even among the heaviest waves. I should add that the armoured deck rounds up considerably (4 feet) from the side, which is but 18 inches above water, so that (neglecting the deck-houses) the deck resembles the segment of a large sphere, and makes the real surplus buoyancy much greater than might hastily be inferred from the fact that the sides rises but 18 inches above the water.

And now, your readers will ask, what happened to this extraordinary vessel in the waves which she encountered ? Well, the answer is that, while presenting an unexampled sight in many respects, and dealing with the sea as I never before saw it dealt with, she made her way through it with almost the same rate of progress as she makes in still water ; she rose and fell bodily to an almost imperceptible extent, and both her pitching and her rolling were so moderate and easy that there was no period this morning—whether the sea was broad on the bow, right ahead, or almost abeam—when one could not stand, walk, or even write with perfect comfort. And, in order to give due weight to these remarks, I must make a public confession, which is that I am one of those who suffer at sea, that any little philosophy or science which I may possess ashore generally dies away within me when steady rolling (weak,

paradoxical phrase!) sets in; and, in a word, that your readers may safely trust me to judge for them as to the measure of this vessel's rolling and of its effects; and I am bound in honesty to aver that, prepared as I was to find her steady, her steadiness astonished and still astonishes me.

LETTER IV.

Arrival at Yalta — The South Coast of the Crimea — Remarks on the *Novgorod* — Action of the Waves upon her when Steaming — Her Speed on a Long Voyage — Reasons for predicting Greater Speed for Circular Ships hereafter — Merits of Circular Ironclads — Their Value as Fighting Ships — Their Ability to Withstand Ramming — Their Internal Arrangements — Their Cheapness compared with Vessels of the Ordinary Type.

Near YALTA, October 15th.

ARRIVAL at Yalta broke the thread of my story, and I now resume it here, in a palace overlooking the sea, in the centre of a splendid natural amphitheatre, in which huge, sheer, and rugged hills—I may even call them mountains—of rock, rise out of the garden, park, and vineyard. The seaward boundary is, on the one hand, a broken battlement of jagged rocks, reaching far into the sea, and lifting from it great towers and pinnacles of ruin, and on the other hand, miles away, are foliated slopes of a sunny mountain, beyond which stoops to the sea the huge Ai-Udagh in the form in which the early Tartars saw a resemblance to a colossal bear, and named the mountain accordingly.* This mountain can only be ascended

* “On the summit are the remains of an ancient castle, the walls of which are composed of enormous blocks of stone, without cement. The fortifications are in a large semicircle, the diameter wall of which is about 700 ft. in length, and the thickness of the walls about 5ft. Where the wall can

from the village of Parthenite on the opposite side. But I must not attempt to describe this south coast of the Crimea, in which grandeur and beauty vie with each other, and the attractions of which at this season of the year draw hither from all parts of this vast empire, over thousands of versts of railroad, Emperor or Empress, Grand Dukes, Princes, and most of those who are great by rank or by wealth in Russia. It is a Russian Italy; only I, who have seen both Rivas, and most of the coast from Leghorn round to Venice, doubt if any spot in South Italy can vie with this. I am certain none can surpass it as a combination of natural magnificence of rocks and hills, with

be approached from the land, thirteen towers defend it, but on the other side of the precipice there are none. In looking at the style of this construction, it is impossible to recognise in it a work of the Byzantine Greeks or the Genoese, who always used lime and water, as may be seen in the ruins of Alushta, Urzwf, Sudak, Theodosia, and Balacava. These ruins are built like those at Little Castele, Demir-Kaper, and other of the most ancient remains in the Crimea. They resemble the Cyclopean walls of Kimmericum (Opuk), and the tumuli of the Gold Mountain near Kertch, and Dubois attributes them to the Tauri and the Tauro-Scythians. This little fortress has not been inhabited since the destruction of the Genoese power in the Crimea, but there is no reason to think that it was ever inhabited by the Genoese or the Greeks. There is no trace of temple or other edifice within it, and the only remains of such are to

be found immediately on arriving at the top of the mountain, where, nestled among some large trees, rise the ruins of a monastery, dedicated to St. Constantine, and St. Helen. It immediately overlooked the village of Parthenité; and Dubois, who imagines that it occupied the site of the ancient temple of the Tauric Diana, thinks that this would be a most interesting place to commence some excavations. He believes that, while the temple at Cape St. George, in the Khersonese, was also dedicated to the goddess, this one of Ai-Udagh was the particular temple where Iphigensia exercised her cruel mission; that it was here that Orestes and Pylades appeared to her; hence the bodies of the victims were precipitated from the top of the rock into the sea below; hence she gazed over the wide horizon, and watched for the vessels of her victims."—(*Vide Murray's Handbook*, p. 304).

luxuriant vegetation, and the frequent splendours of a southern sea and sky.

But to return to the circular ship. After reading what I have said of her great steadiness, the reader will be disposed to say, "But surely the heavy swell and the waves you speak of must have rolled in almost overwhelming masses over so low a deck, the edge of which was but 18 inches above the sea?" But this was far from being the case. Certainly more or less considerable quantities of water did sweep occasionally over the deck, and when the waves were at the greatest almost every wave did this to a greater or less extent; but even at the worst there was nothing like the precipitation of great solid bodies of water many feet in depth upon the deck, and none of those heavy blows of the sea against the deck-houses which most persons would think absolutely certain to be felt in such a seaway. The fact seems to be that, whether the sea is rising under the side of the ship (and the word "side" may here stand for bow and stern as well in this respect), or whether the side be descending upon the sea, in either case the vessel drives out from under her a wave of her own making, and this wave, encountering the approaching one, opposes itself to it, and greatly reduces if it does not destroy its velocity. In many cases this wave which the vessel drives from her entirely stops the on-coming wave, and even forces it back from her, so that not a drop of it falls upon the deck except in the form of spray. At other times the on-coming wave in part prevails, and precipitates a portion of its water upon the deck, but even this portion is so reduced in bulk and

in velocity that its effect is very much less than it would be if the wave had broken upon a rock or a shelving shore. Many people speak of the low-decked vessels as "half-tide rocks," but, for the reason I have stated, this circular ship at least does not justify the simile, but presents a totally different phenomenon from that which the sea-struck rock offers. Of course I do not pretend, or wish it to be for a moment understood, that the sea which we encountered yesterday, even approached the heaviest seas, or that the heaviest seas would not have given much greater motion to the *Novgorod* or tried her much more severely. Nor do I forget that it is by occasion of great waves, attended by exceptionally deep sea-hollows (or negative waves), that ships at sea are most strained and endangered. I am simply recording facts, and wish them to be taken exactly for what they are worth; but I confidently draw from them the inference that a circular ship of low freeboard, such as the *Novgorod*, small as she is, is a very much better seaboat than most persons would expect to find her, and also that in her we have (apart from considerations of size, height of side, and other secondary matters), a type of vessel possessing remarkable sea-going qualities.

As the *Novgorod* is so small, and being intended for coast defence, has but moderate engine power, and as her engines do not efficiently use even the steam that is provided, her speed, at the best, is below eight knots. She has before now steamed over 100 knots at $7\frac{1}{2}$ knots per hour. With us she steamed a much longer distance at $6\frac{1}{2}$ knots, and the greater or less amount of head sea seemed to have very little effect upon her.

The second vessel, which was recently launched (the *Admiral Popoff*), although small, is considerably larger than the *Novgorod*, but she has even less power than in proportion to her size, so that if she steams as well she will be a success in this respect. She cannot, however, throw any light upon the question of high speed, for that can only be done by the application of greater power in proportion to size. I am convinced, however, that great speed can be had in this type of vessel, owing to the enormous capability it possesses for carrying boilers, engines, and fuel, and I must say also, owing to the great advantages which larger ironclads of this type would possess in comparison with small ones. I do not expect to carry many persons with me at present in predicting a high speed for these vessels hereafter, for I know by long and wide experience how stubborn men's prejudices are on this sort of subject. My short ships, reasonable as the principle of their design was, conclusively as I demonstrated what their speed would be, and successful as they have always been in point of speed, are not without their opponents even now. The First Lord of the Admiralty told me, when the *Bellerophon* was about to be tried first at Stoke's Bay, that he had been three days in Portsmouth, mixing with the officers there, and could not find one among them who believed she would ever exceed 11 knots; yet the next day she went faster than this with only half her boiler power, and $14\frac{1}{4}$ knots with her full power.* Still a mass of prejudice exists against the speed of

* During the present year the latest large ironclad ship of my design, the Imperial German frigate *Deutschland*, which is 20 feet shorter than the *Bellerophon* and 7 feet broader, steamed nearly $14\frac{1}{4}$ knots with less than her full power.

short ironclads to this day, and scores even of naval officers, having

“ Complied against their will,
Are of the same opinion still.”

And if people will not believe in the great speed of short ironclads, even when dozens of them have been proved to possess it, how will they believe in the great speed of circular ironclads even before a fast one has been built? Still I, who cannot afford to make any hazardous or rash statement on this subject, do not hesitate to say that such ships may and will be made with the quality of high speed added to their enormous armour-carrying power, their ponderous armaments, and their moderate draught of water. The fact is, although people are so slow to understand it, that when a ship is to be built of heavy armour her form should be determined by quite other considerations than those which at present sway the minds of shipbuilders. Sooner or later this will come to be understood, and in order that I may hasten the understanding of it, or at least stimulate responsible persons to think of it attentively, I have troubled you with these lengthened observations. I know well that in England it is thought that circular ironclads are the mere fancies of a clever and energetic naval officer, who has obtained the sanction of the highest authorities in a country where the Imperial will is omnipotent and must not even be gainsayed. They think the fancy will pass away and circular ships be heard of no more, but these views are all and altogether mistaken. Admiral Popoff designed circular ironclads after the most thoughtful and careful considera-

tion of what other nations had done and were doing. He understood and appreciated the changes made in our own navy and in other navies as the thickness of armour and the power of guns increased; from these things he inferred his own system, and I believe that time will prove his ideas to be sound and permanently useful. If there had not been great and substantial merit in them they would not have been adopted here, for they were only adopted after the closest and most anxious investigation on the part of those who are responsible for the Navy of this country; and in a matter of such grave importance to the national defence the scrutiny of the highest person himself was not wanting. I have had the honour to-day of a presentation to the Emperor at Livadia, and I ventured to congratulate his Majesty upon the possession of the first ironclad with 18 inches of armour that is yet afloat. To me that fact seems full of the greatest significance, and it is one which ought to be understood even by those who can understand nothing else. It certainly reflects the greatest credit upon the Russian Government and upon the gallant and able officer to whose genius and perseverance it is due.

The existence of the *Novgorod* and of the *Admiral Popoff* have, in my opinion changed very materially the ironclad-ship question. Before these ships were built, or one of them tried, it was easy, and perhaps natural, for the great bulk of naval architects and naval officers to slight the principle, and even to laugh at it. For my part, I have always spoken of these vessels with respect and favour, and after my recent

experience at sea in the *Novgorod* I shall speak of them with more respect and favour than ever. They have many very important advantages. Besides carrying heavy armour, they have this armour disposed in the best manner, without any of those compromises which other navies are resorting to, perhaps more than ever. These circular ships have no unarmoured ends, like some of the latest ironclads; no unprotected broadsides, like others; no tapering belts, no armour getting thin and still thinner near the ends. Their armour is uniformly thick, and uniformly deep down, and uniformly high up everywhere, and therefore I maintain they are in this respect fighting ships *par excellence*. They have also better deck protection than any vessels that I know of, and they have it in such a form and at such a height as to give thoroughly efficient protection to all the vital parts and contents of the ship. The armament is in the best possible place—viz., the centre of the ship; it may be of the most powerful kind; it has the greatest range; and not only is it carried upon a very steady platform, but carried where that platform has next to no rise or fall, and where such rolling and pitching motions as do exist are scarcely appreciable. Their huge guns may be carried on any preferred principle, whether it be in a turret or on a Moncrieff carriage, or on a plan which Sir Joseph Whitworth and I projected, that of making the gun itself big enough to defy shot and shell, and with a breach big enough to hold the men who work it. Instead of a single set of engines and screw-propeller, or of two, as in the *Devastation*, the *Novgorod* has six, and the *Admiral*

Popoff will have the same ; so that, while having a rudder and obeying it well, the circular ship is in no degree dependent upon it, but may still be both steamed and steered perfectly well with rudder gone and several engines or screws disabled. Of their behaviour at sea these vessels have already given excellent promise ; and, for my part, I would prefer going to sea in a good circular ironclad of proper size to going there in an ordinary armour-plated ship. The two ships which I have seen have not been fitted as rams, torpedo arrangements being preferred, but there is nothing whatever to prevent them from being ; and their extreme handiness—which greatly surpasses, I am bound to say, even the handiest of my own vessels, which are themselves handier than any previous ones—especially adapts them for adopting this mode of attack with terrible effect. For resisting or sustaining the attack of a ram they are the best form of ship afloat, because, as the ram can only attack their circumference, the engines, boilers, magazines, and all large internal spaces may be kept well away from its reach. The question of draught of water is effectually solved by the circular ships, and solved in the best manner. And, finally,—although I might mention other advantages,—these ships are healthy and commodious for the very small number of men which they really require. Of the great economy and cheapness of such vessels I need not say a word, because they obviously possess the advantage of limiting the whole extent, and therefore, the whole expense, of the ship proper, to the armoured hull, instead of requiring long and costly ends to be built and equipped after the manner of

ordinary armour-clads.* In this, as in so many other respects, these ships furnish a very striking example of the simplicity and directness with which the objects in view have been attained. In all other ironclads the fighting elements are more or less interfered with and sacrificed for the sake of preserving the usual features of ships; but in these Popoffka, offensive and defensive power has not been sacrificed to anything; the desired draught of water, also, has been conformed to, and in all ways what I may call the value of the vessel as a fighting engine has been made the great and ruling object. This is what I so much admire in them, and now we know that they are just as successful in a naval sense as if all kinds of sacrifices had been made in order to conform them to naval ideas and traditions. I will not further extend these remarks, interesting as the subject is, for if what I have already said fails to awaken due interest in it, nothing that I could at present add would do so. I will, therefore, conclude by thanking, through your columns, those to whom I owe the opportunity of acquainting myself, under fortunate and extremely pleasant conditions, with the first examples of the "ship of the future." If my remaining stay in this part of Russia should suggest further observations, I will venture to trouble you with yet another letter, but not otherwise.

* It may prevent misapprehensions, if I say that I do not for a moment forget that much greater engine-power will be required to drive a given displacement at a given high speed in a circular ship than in a ship of ordinary

form; but this consideration is to some extent—I think to a large extent—counterbalanced by the fact that, other things being equal, the displacement required will be much reduced.

LETTER V.

The Russian Climate—Journey to Moscow by Rail—Rapid Changes of Temperature—Damage done by Snow-storms between Kharoff and Moscow—Precautions necessary in Running Trains in the Winter—Telegraphic communication stopped—Great cost of working Russian Railways in the Winter—Russian Railway Stations—Yalta—Further references to Southern Russia—The Imperial Palaces of Livadia and Orianda—Scenery of Orianda.

Moscow, Oct. 22.

THE scenery and climate of Russia, and more especially the changes of both with which travelling makes one acquainted at this season of the year, seem worthy of note and record. On Sunday last I was plucking grapes in the vineyards of Orianda, gathered garden roses—the last roses of summer certainly, but summer roses notwithstanding. On Tuesday morning I saw day break over the dismal waters of the Sivash, and felt the keen air blow across the desolate steppes beyond. Early on Wednesday morning, as the train approached Kharkoff, I woke in mid-winter, with the whole land covered deep in snow. On Thursday I reached Moscow in mid-winter still, drove to my hotel in a sledge through the icy streets, my breath freezing as I went. Between the Kharkoff and Moscow we passed over a hundred miles and more of railway on which all luggage traffic was stopped, widely-extended snow-storms having borne down

the telegraph wires, and in some places the telegraph posts also, making it necessary to run passenger trains only, and to run them with great care and many precautions. In my first letter to you from Russia, sent a fortnight ago, I spoke of the slowness of railway travelling in Russia, and suggested the desirability of facilitating at least the transit of through passengers. I showed also how almost impossible it was for passengers even to use at all the railway to Nicolaieff under existing arrangements. I do not wish to retract or modify anything I then said, and I am glad to hear that communications with Nicolaieff, at least, will shortly be much improved. Still, there are several considerations which materially influence the speed of railway travelling in Russia, and which must be taken into account when a judgment is formed on the subject. The rigour of the climate, and both the suddenness and the earliness with which extreme weather sometimes sets in, are illustrated in what I have already said. But it requires some reflection in order to see how materially such things affect the speed of trains. The sudden stoppage of telegraphic communication by snow-storms in the month of October, is, however, pretty significant, entailing, as it might readily do, the greatest perils when applied to a vast system of railways like that of Russia. I must confess that the destruction of the telegraphs which I have witnessed on my way here—and I am informed that it extends over the Kief and other railway lines besides—causes me to wonder at the seeming weakness of these telegraph lines, the posts being long and slight, very far apart for the circumstances, not always well secured in the ground, and

Livadian palaces, and eastward through Ursuf, and on to Alushta, returning at eve to see moon or stars shine down on the beautiful little bay—beautiful rather, however, to the eye of him who looks from the shore than to his eye who from the deck sees the first waves raised by the rising gale roll into the harbourless anchorage. It ought also to be said that your correspondent, Dr. Russell, after the close of the siege of Sebastopol, drove through the Baidar Valley and the gate of Phoros, and along part of this coast, and bore eloquent testimony to its majesty and beauty. But his road was beset with difficulties, his drive interrupted by many labours, and he mentions but part of the way; so that even his pen has not sufficiently made known the attractions of this romantic shore. Mine shall not even attempt to do so, but I may be forgiven for again mentioning their existence. The whole of this coast for more than the hundred miles I have named teems with interest—historic, geologic, ethnologic, and other. Greeks, Turks, Genoese, and all kinds of Tartars have been here leading their lives and bequeathing their records, and spreading their petty deeds and memories like moss or lichens over the grey and ancient rocks, which slope upwards from the sea for a few thousand yards inland, and then tower grandly and steeply to the clouds.

Yalta, which is the central point of this lovely region, is a most curious and charming little town; the buildings within it are formed and grouped picturesquely, and the villas of the environs, which chiefly belong to the Russian nobility, present specimens of architecture which, while very various, are also

very unlike what the eye is accustomed to in our own country. On the shore you see seafaring men from all the Black Sea ports of Russia and Turkey, including of course those of the Caucasus, and in the shops are a thousand reminders of your being far from Western Europe. Livadia, which is barely a couple of miles from Yalta westwards, is an estate of the Empress of Russia, and is a group of woods, vineyards, and Imperial Palaces, and beyond Livadia are yet Orianda and another Imperial Palace or two, and further on still is the largest and most pretentious building of all at Alupka, the residence of Prince Woronzoff, whose father did so much for Southern Russia. I wish I could find time to sketch the career of this remarkable and far-seeing man, or even only to mention the evidences of his wisdom and patriotism which I have come across at Odessa, Sebastopol, the South Crimean coast, and elsewhere. To do so would be to indicate how much one man—and that man no Emperor or King—may do to apply the forces and diffuse the blessings of civilisation. But this pleasing and grateful task I must leave to others. Of all these beautiful retreats of the various members of the Imperial family of Russia that which is perhaps the most remarkable for natural scenery is Orianda. Orianda, while facing on one front a majestic amphitheatre of mountain rocks filled with deep-shadowed woods, on the other stands in the full-faced presence of the sea, near enough to it to let the eye interest itself with the evanescent and ever-varying chasing and carving which the breeze is perpetually graving upon its steel-bright surface, yet high enough above it to give vastness to

the ocean plain over which sun and shadow, calm and gale, sweep, which vastness I consider to be an essential condition of that great liberation which the sea is able to afford to the mind. I spent one day in riding up and about the hills of Orianda, getting ever-new views from summit after summit, for the hills are largely formed of successions of huge rocks standing sheer and steep to seaward, and sloping pretty steeply inland, and it was obvious that the resources of the place as regards various and always strikingly picturesque scenes were practically inexhaustible. But I must not extend these remarks by giving any particulars, merely adding that this visit to the South has had one pleasing effect at least upon my mind, by largely dissociating from the word Crimea memories of bleakness, misery, and bloodshed, and linking with it remembrances of a fair land with a genial clime, of vineyards and orchards teeming with abundance, and of overflowing kindness and hospitality.

LETTER VI.

Arrival at St. Petersburg — Early Approach of Winter — Visit to Cronstadt — Virgin Ice in the Gulf of Finland — Ice-Drift from Lake Ladoga — The *Peter the Great* at Cronstadt — Her Present Condition of Progress — A Dock at Cronstadt One Thousand Feet Long — Naval Club at Cronstadt — Trials of Fast Steam Launch on the Neva — Sailing Trials of a Circular Yacht — Conclusion.

ST. PETERSBURG, October 23rd.

TO-DAY I have been to Cronstadt, and cannot doubt we have experienced the first day of winter in these parts. At Moscow, as already stated, there was winter, and, for aught the senses told one, it might have been mid-winter. But, on leaving Moscow and approaching this city, the air became more temperate, and the snow disappeared, and for the two days that I have been here, although the air was cold and even keen, one could not until this morning say that the winter of the north had set in. Its approach has, it is true, been feared for several days past, and the first merchant with whom I conversed was full of anxiety lest the navigation of the Neva should be prematurely closed. Yesterday this fear had not abated, and in arranging a river trip for to-morrow the hope that the ice would not come to stop us was but dubiously expressed. This morning, on reaching the quay to embark for Cronstadt, I was informed that a telegram had been received

notifying that the ice was on its way down from Lake Ladoga, and on reaching the river mouth we found that the work of winter had commenced in earnest, below the city as well as above. The river Neva and the adjacent gulf are exceptionally low at present, and the visible sandbanks, therefore, are unusually numerous and extensive, and around each and all of them the crisp white ice was rapidly forming and spreading. Winter has begun here, not as at Moscow, with falling snow, which is the effect of cold, but with the cold itself, keen, intense, penetrating, biting at nose and ears, freezing the moist breath as it escapes, and proving itself in a thousand ways as swift, as subtle, and as fierce as fire. As we approached Cronstadt we found the ice rapidly advancing beyond the white and virgin state in which we saw it form and cling around the shallow banks of the gulf, and accumulating in rugged masses in the harbours and basins. By the time we had completed our visit and re-embarked there was a visible and marked increase in the extent of it, and on every hand the fantastic forces of the frost were busily at work. Round every pile a rugged flange of ice was forming; along the water-line of every ship a jagged rib or side keel was protruding; every newly-raised anchor glistened as with enamel, while from its dripping cable hung a catenary of icicles. Every wet rope became an ice bar, and wherever water fell or trickled from wharf or vessel it froze into spreading sheets or lengthening spears. Most curious of all was the manner in which the little paddle-steamers were hung with these sheets and spears of ice, for the moving water which they threw up, being

impregnated with air, froze in almost perfect whiteness, and with a frolic variety of form over paddle-boxes, sponsons, bows, waist, and quarters. Their hulls of iron were rapidly becoming sheathed with ice by rough and invisible, but rapid artificers. From outside of the harbours and bays the young ice came floating and freezing in, one could not see whence, burdening and depressing the waves more and more as they approached the shore, until they at last became too feeble to raise it, and disappeared beneath the solid ice-surface that rapidly extended itself seawards. Cronstadt presented a busy scene, the crews of both inward and outward-bound vessels exerting themselves to the utmost to complete their work before the sea itself becomes solid, and has to be traversed no longer by ships and boats, but by sledges and carriages.

My object in visiting Cronstadt was to go over the *Peter the Great*, a ship the completion of which has been long delayed, and over the delay of which some occasional critics have made merry. I have myself been sometimes reproached and sometimes bantered for having spoken of this ship as I did three or four years ago, although I am not aware that I ever named or indicated a date for her completion. No doubt, however, her completion has been greatly and unexpectedly delayed, and when she recently put in an appearance at a naval review it was with mock turrets in the absence of the real ones. I shall not take the trouble to state all the causes of the delays that have occurred with this vessel, but it may be observed that two shiploads of her armour-plates were lost with the ships that were carrying them, and that the completion of her supplies of

armour-plates, which the Russian factory at Kolpino is rolling, has been deferred until some of the extensions of the factory were further advanced. I have no doubt also that the progress of the *Peter the Great* has been somewhat delayed by the deliberate preference which has been given to other works, such as the advancement of the fast ironclad corvettes *Duke of Edinburgh* and *General Admiral*, of the converted ironclad *Mineen*, and, above all, of the second Popoffka at Nicolaieff. It would be rash, and probably wrong, to assert that the preference of other work before that on the *Peter the Great* has been unwise, especially as England alone has even now vessels of her power equal to her in advancement, and I know with certainty that it is to the remarks on the *Peter the Great* made in your columns at the time referred to that we owe the activity in the production and advancement of powerful ships which our own Government then and afterwards exhibited. Suffice it to add that the *Peter the Great* is complete in almost all respects except as regards her turrets, and these are in rapid progress. Moreover, the first circular ironclad, the keel of which I then saw laid, has been complete for more than two years, and the second vessel of the type, plated with 18-inch armour, is now afloat. Of course we know that Russia cannot afford to spend very large amounts on her navy, and I find that the amount of the expenditure which she does afford for the purpose is limited even more arbitrarily than it is in our own country; nevertheless it will be seen, I think, that the construction of the *Peter the Great* and of Admiral Popoff's very powerful vessels, and the progress made with them, have

deserved more notice, and not less, than I have occasionally claimed for them. But I must not dwell on this point, nor must I add much to what I have already written of this visit to Cronstadt. I should like, however, to devote a word to two subjects. We hear a good deal from time to time, and properly so, of Pèter the Great himself, and the city in which I write this is a vast and marvellous monument of his intellectual greatness. But Cronstadt contains another embodiment of his ideas which, from my point of view to-day, is a very striking one. We are in the habit of priding ourselves upon the construction in modern days of large stone docks, big enough to receive our largest steamers, but Peter the Great, nearly two centuries ago, much more than anticipated us by building here a dry dock long enough and broad enough and deep enough to receive six or eight at once of the very largest steamers now existing in our mercantile or war navies! A thousand feet of this dock, cut off from the remainder by a caisson or gates, was to-day prepared to receive three ships on end, and it was here that the *Peter the Great* received her armour-plates. It is surely well for us, as a people, sometimes to observe what other countries have done even in our own cherished domain of naval enterprise. The second thing which greatly impressed me at Cronstadt was a very fine Naval Club with adjacent museum and library, all materially aided by the Government. I am not an advocate for much Government expenditure on such things as clubs and libraries, but in places like Cronstadt, where there are but few resources for naval officers, and where naval officers must nevertheless reside, the substantial encouragement

of such institutions, and at least so much assistance as entitles the Government to see them well and economically managed, is greatly to the advantage of the naval service. We have certainly done much in providing naval barracks, and in other ways to aid and improve both officers and seamen, but from what I heard of the management and details of the Cronstadt Club, and from what I saw of it myself, I think we might derive from it some useful suggestions.

October 27th.

I must bring these lengthy letters to a close by the brief mention of a few more facts concerning what one has seen here, more especially in connection with marine affairs. The activity and varied enterprise existing here may be inferred from the circumstance that I have divided my time to-day between the steaming trials of an extremely fast little screw launch and the sailing trials of a circular yacht. Most of your readers will have heard of, and many have seen, the fast little river steam yacht which Mr. Thorneycroft introduced with so much skill, enterprise, and success. The Grand Duke Cesarewitch of Russia having bought one of these little steamers and brought her here, it occurred to Mr. Baird, who is the head of a large engineering establishment in this city, to show what can be done in Russia in a similar way ; and it is on board the little craft which he has produced that I have been to-day. She has been built of thin sheet brass and fitted with compound engines, from the designs of Mr. Norman Scott Russell, the manager of Mr. Baird's establishment, and is in every respect a great success, decidedly surpassing in speed, I am credibly informed,

the English steel boat. I cannot doubt that she to-day exceeded a speed of eighteen miles an hour, although under conditions that were not altogether favourable. Mr. Thorneycroft's boat was said to have gone in England at a higher speed than Mr. Baird claims for his, but when the two competed here the Russian-built boat was the faster. As a specimen of these extremely light and fast river boats, which are so useful for taking three or four persons swiftly from place to place, Mr. Baird's deserves great praise. No less praise, but from quite another cause, is due to the curious little circular sailing yacht, 20 feet in diameter, in which I afterwards made some sailing trials. This little craft was built by a young officer of the Russian Navy attached to Admiral Popoff's Staff, to show that the circular form is not by any means so adverse to speed as many suppose. She is cutter-rigged, with a very taut mast, and has great speed under canvas in combination with an altogether unequalled power of staying and wearing. She is perfectly round, like a tea-saucer, decked somewhat after the fashion of a Bermuda boat, and, having great stability, can carry, almost without inclination, all the canvas which it is possible to spread upon her. She is consequently very fast, and, as I have already said, extremely handy withal. Like everything else that I have seen in connection with Russian circular ships, she is calculated to disturb many prejudices and to teach much even to those who know most.

During my stay in this country I have had the very great advantage of meeting and holding lengthened converse with some of the leading men and Ministers of the Russian Empire,

and of learning much concerning its administration and its policy. My engagements have left me no time for putting on record with the necessary care any views or opinions which I may have formed on these subjects, and I have therefore confined myself in these letters to more familiar topics; and even upon these I have been obliged to write so quickly and disjointedly that I no doubt owe both you and your readers many apologies. Still, I hope what I have written has conveyed some interesting information respecting what is undoubtedly a most interesting country; and in the matter of the circular ironclads I cannot doubt that the facts and considerations which I have recorded, however hastily, deserve careful attention. Of the great value of circular ironclads for the object originally contemplated in their construction—namely, the defence of the Azof Sea and of the mouth of the Dneiper, and of their perfect success in this respect, there cannot be a doubt. In my mind there is as little doubt about their equal value for more extended services. That they will be made fast and found seaworthy I take to be quite certain. Here, then, we are confronted by a new and powerful type of vessel the qualities of which it must assuredly be our duty to consider; and, although I am well aware that what I have said in its favour will be by some exaggerated and by some misconceived, I nevertheless hope that I may secure for the subject that attention which every great naval question deserves in our country.

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